V03202

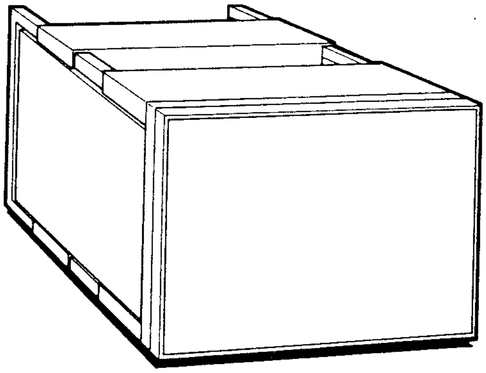
RVP-400QM

100 St.

SERVICE MANUAL

AEP Model

Chassis No. SCC-D82C-A



MODELS OF THE SAME SERIES	
RVP-400QM	
VPH-1271QM	
RVP-400Q	

SPECIFICATIONS

Optical

Projection system	3 picture tubes, 3 lenses, Horizontal inline system, Rear projection type
Picture tube	7-inch high-brightness monochrome tubes, with coolant sealed
Projection lens	HACC (High-resolution Aspherical and Color Corrected) lenses F1.0/96mm
Projected picture size	Factory-adjusted to 40 inches measured diagonally
Screen	Black stripe, 1.0mm pitch
Luminance	150 ft-L (all white) 500 ft-L (white peak)

General

Color system	PAL, SECAM, NTSC and NTSC4.43 systems, switched automatically
Resolution	640 x 480 dots (RGB input at 50 kHz) 600 TV lines (VIDEO input)
Bandwidth	30MHz (–3dB)

RGB inputs	Horizontal frequency: 15 kHz – 50 kHz Vertical frequency: 38 Hz – 150 Hz
Test signal	Cross hair test pattern generator is incorporated.
Inputs	**VIDEO input** VIDEO IN Y/C: 4-pin mini DIN connector Y (luminance) signal: 1 Vp-p±2dB, sync negative, 75 ohms terminated C (chrominance) signal: burst 0.286 Vp-p±2dB, 75 ohms terminated (NTSC) 0.3 Vp-p±2dB, 75 ohms terminated (PAL) VIDEO: BNC connector Composite video input, 1 Vp-p±2dB, sync negative, 75 ohms terminated

— continued on next page —

MULTISCAN® REAR PROJECTOR

SONY®

MICROFILM

RGB input
R: BNC connector
  Red input, 0.7 Vp-p±2dB, 75 ohms terminated, positive
G/G SYNC: BNC connector
  Green input, 0.7 Vp-p±2dB, 75 ohms terminated, positive
  Green with sync input, 1 Vp-p±2dB, 75 ohms terminated, positive
B: BNC connector
  Blue input, 0.7 Vp-p±2dB, 75 ohms terminated, positive
SYNC/HD: BNC connector
  Composite sync input, 0.3-4 Vp-p, 75 ohms terminated, positive/negative
Horizontal sync input, 0.3-4 Vp-p, 75 ohms terminated, positive/negative
VD: BNC connector
  Vertical sync input, 0.3-4 Vp-p, 75 ohms terminated, positive/negative
REMOTE 1 connector: 14-pin connector
REMOTE 2 connector: 9-pin connector
CONTROL S IN: minijack, 5 Vp-p

Outputs VIDEO OUT: BNC connector
  Composite video output, 1 Vp-p±2dB, impedance 75 ohms, output video signal from the VIDEO IN connector
CONTROL S OUT: minijack, 5 Vp-p

Power requirements 220–240 V AC, 50/60Hz
Power consumption 340 W (Video input)
395 W (RGB input)
Dimensions 824 × 621 × 1,470 mm (w/h/d)
(32 1/4 × 24 1/2 × 57 7/8 inches)
Screen frame 5 mm (7/32 inches)
Weight Approx. 112 kg (244 lb 11 oz)
Accessories supplied Remote control cable (1)
AC power cord (1)

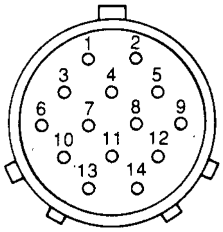
Design and specifications are subject to change without notice.

Optional accessories

Remote Commander RM-1271
Connecting cables SIC-10
SIC-20
SIC-21
SIC-22
SIC-23
SIC-30
CCQ BRS Cables
Interface board IFB-11 (5 BNC, analogue)
IFB-20 (9-pin, analogue)
IFB-30 (9-pin, digital)
IFB-1000 (Video, Y/C)
IFB-1200 (3 BNC, Component)
Signal interface switcher
PC-1271M
IFU-1271M

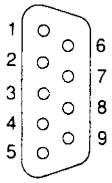
Signal assignment

REMOTE 1 connector (14-pin)



Pin No.	Signal
1	GND
2	HD/Composite Sync
3	SIRCS
4	NC
5	GND(SIRCS)
6	B/C
7	GND(B/C)
8	GND(G/Y)
9	G/Y
10	RGB/Video
11	R/Composite Video
12	Composite Video/YC
13	AUDIO
14	VD

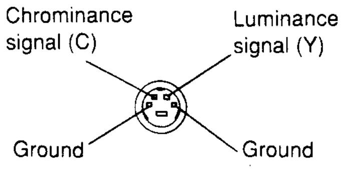
REMOTE 2 connector (D-sub 9-pin)



Pin No.	Signal
1	Frame Ground
2	$\overline{\text{Transmit A}}$
3	Receive B
4	Receive Common
5	Spare
6	Transmit Common
7	Transmit B
8	$\overline{\text{Receive A}}$
9	Frame Ground

RS-422 format

Y/C Connector (4-pin mini: DIN)



RVP-401QM/CHP-401QM

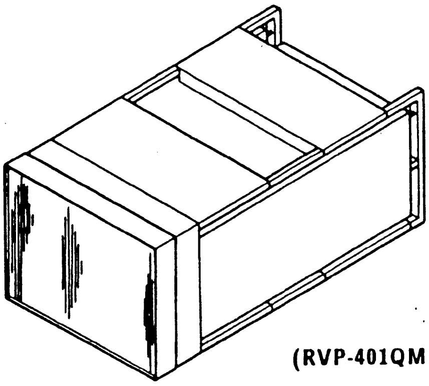
SERVICE MANUAL

REVISED

V12329

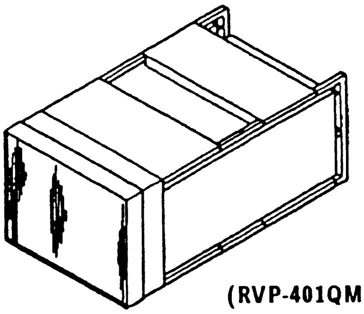
AEP Model
RVP-401QM
Chassis No. SCC-D82F-A
CHP-401QM
Chassis No. SCC-D96A-A

On this service manual, "RVP-401QM and CHP-401QM", only the differences from "RVP-400QM" are described. Please use the service manual of "RVP-400QM" to repair those 4 models.

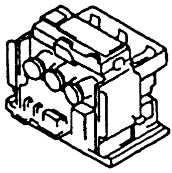


(RVP-401QM)

Differences : 1. Between RVP-401QM and RVP-400QM : Shapes of the screen holders are different.
2. Between CHP-401QM and RVP-401QM : CHP-401QM is the chassis of RVP-401QM only.
As the VIDEO/INPUT OUTPUT was delated, BA board was removed.



(RVP-401QM)



(CHP-401QM)

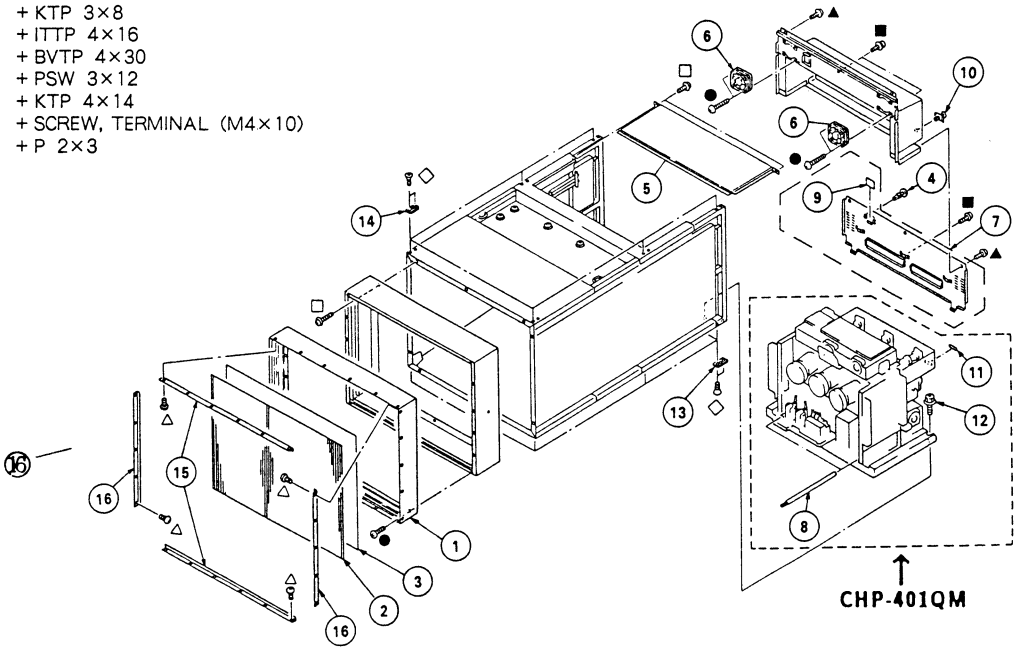
MULTISCAN® REAR PROJECTOR

SONY®

SECTION 8 EXPLODED VIEWS 8-1. CABINET (See page 327)

RVP-401QM

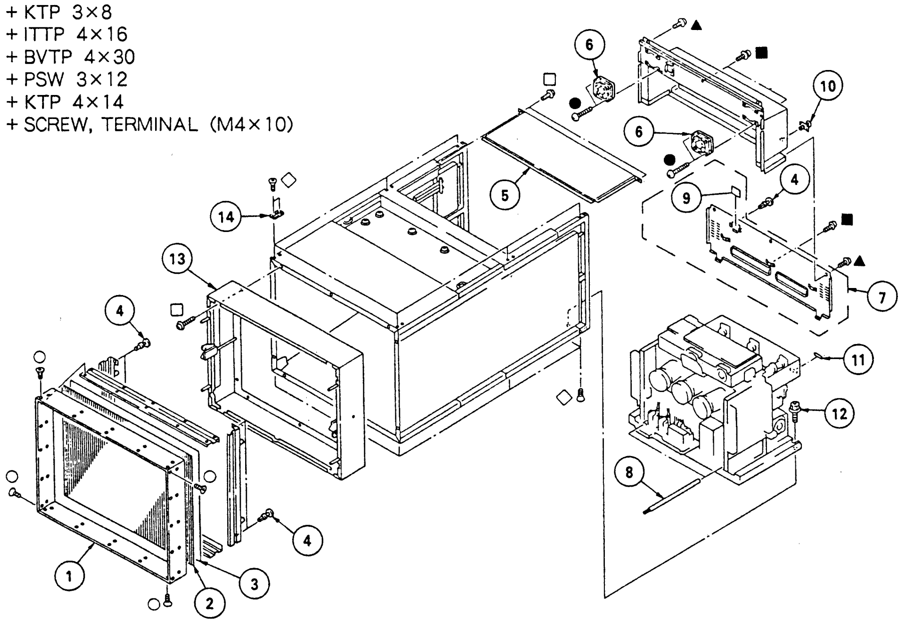
○ : 7-685-246-19 +KTP 3×8
□ : 7-685-663-79 +ITTP 4×16
● : 7-685-666-79 +BVTP 4×30
■ : 7-682-650-09 +PSW 3×12
◇ : 7-685-262-19 +KTP 4×14
▲ : 3-701-810-81 +SCREW, TERMINAL (M4×10)
△ : 7-627-853-28 +P 2×3



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	* 4-044-780-03	HOLDER, SCREEN	13	* 4-042-637-01	WASHER
2	4-042-859-11	ILLUMINATOR (L)	14	X-4031-510-1	WASHER ASSY, PIN
3	4-042-858-12	ILLUMINATOR (TFF)	15	4-042-643-02	RETAINER (L), SCREEN
			16	4-042-644-02	RETAINER (S), SCREEN

RVP-400QM

○ : 7-685-246-19 +KTP 3×8
□ : 7-685-663-79 +ITTP 4×16
● : 7-685-666-79 +BVTP 4×30
■ : 7-682-650-09 +PSW 3×12
◇ : 7-685-262-19 +KTP 4×14
▲ : 3-701-810-81 +SCREW, TERMINAL (M4×10)



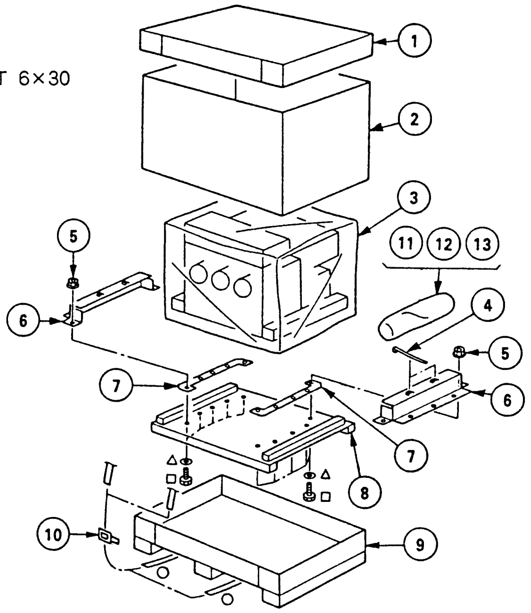
REF. NO.	PART NO.	DESCRIPTION
1	* 4-032-536-01	HOLDER, SCREEN
2	4-032-513-11	ILLUMINATOR (L)
3	4-032-514-11	ILLUMINATOR (TFF)
14	X-4032-939-1	WASHER ASSY, PIN

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CHP-401QM

PACKING

○ : 7-633-110-62 PP BAND (19)
□ : 7-683-361-07 HEXAGON BOLT 6×30
△ : 7-688-006-11 W6



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	* 4-046-338-01	LID	
2	* 4-046-552-01	SLEEVE	
3	* 4-346-480-01	BAG, PROTECTION	
4	* 4-047-031-01	BAND	
5	* 3-703-361-01	NUT(M6), FLANGE	
6	* 4-040-922-02	BRACKET	
7	* 4-040-923-01	PLATE, NUT	
8	* 4-046-340-01	CUSHION, LOWER	
9	* 4-046-337-01	BORAD, BOTTOM	
10	* 4-603-966-01	STOPPER(LARGE), SPEED	
11	1-575-100-21	CABLE, MINIATURE PLUG	
12	1-590-151-11	CORD SET, POWER	
13	1-941-648-22	CONNECTOR ASSY, MICRO 2P	

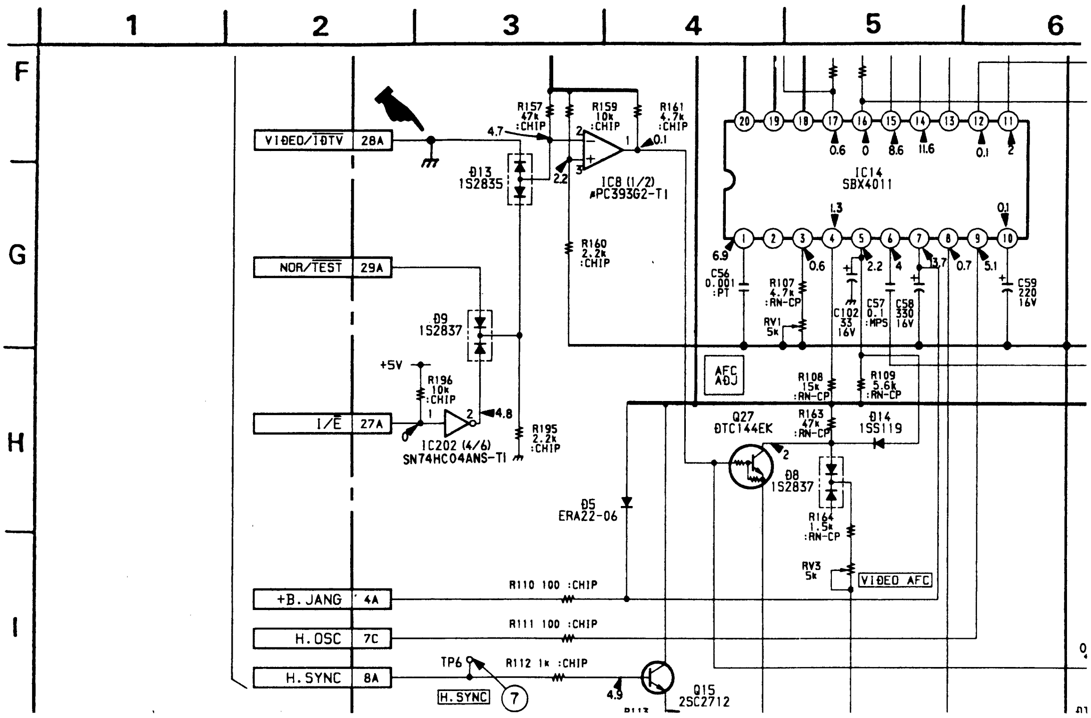
CHP-401QM

☛ : Corrected portion

7-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

DA BOARD

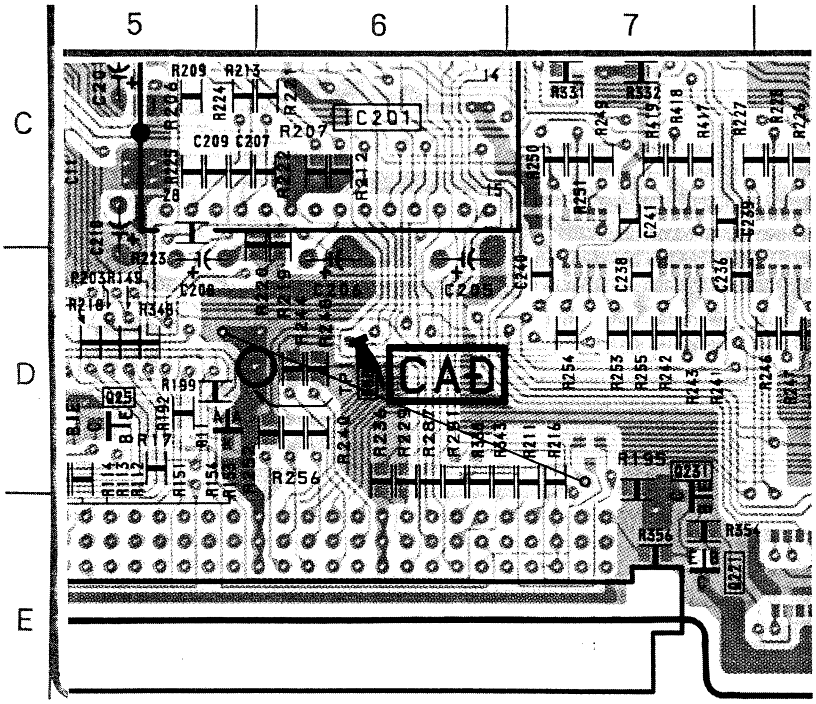
SCHEMATIC DIAGRAM (See page 234)



1
2
3
4
5
6
F
G
H
I
VIDEO/IDTV 28A
NOR/TEST 29A
I/E 27A
+B. JANG 4A
H. OSC 7C
H. SYNC 8A
R157 47k :CHIP
R159 10k :CHIP
R161 4.7k :CHIP
4.7
0.1
2.2
D13 1S2835
IC8 (1/2) μPC393G2-T1
R160 2.2k :CHIP
D9 1S2837
+5V
R196 10k :CHIP
IC202 (4/6) SN74HC04ANS-T1
4.8
R195 2.2k :CHIP
D5 ERA22-06
IC14 SBX4011
0.6
0
8.6
11.6
0.1
2
1.3
0.1
6.9
C56 0.001 :PT
R107 4.7k :RN-CP
RV1 5k
C102 33 16V
C57 0.1 :MPS
C58 330 16V
C59 220 16V
2.2
4
3.7
0.7
5.1
AFC ADJ
R108 15k :RN-CP
R109 5.6k :RN-CP
Q27 DTC144EK
R163 47k :RN-CP
D14 1SS119
D8 1S2837
R164 1.5k :RN-CP
RV3 5k
VIDEO AFC
R110 100 :CHIP
R111 100 :CHIP
TP6
R112 1k :CHIP
H. SYNC
7
4.9
Q15 2SC2712

DA BOARD

PRINTED WIRING BOARD (CONDUCTOR SIDE) (See page 240)



5
6
7
C
D
E
IC201
R209
R213
R224
R207
C209
C207
R212
R223
R203
R149
R218
R348
C208
C206
C205
C240
C238
C236
C241
R331
R332
R249
R418
R417
R227
R250
R251
Q25
R199
R192
R177
R114
R113
R112
R151
R154
R256
CAD
TP1
R240
R236
R229
R287
R281
R346
R343
R211
R216
R254
R253
R255
R212
R243
R241
R246
R195
Q231
R356
R354
Q221

9-976-672-02

Sony Corporation

B&I Systems Company

English
95DJ02082-1
Printed in Japan
©1995.4

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

1-1. Location and Function of Controls 5
1-2. Using the RM-1271 Remote Commander 8
1-3. Projecting 14
1-4. Centering Adjustment 22
1-5. System Connections 24
1-6. Dimensions 27
1-7. Appropriate Viewing Area 30
1-8. Stacking the Projectors 32
1-9. System Connections 33
1-10. Setting the IFB-101 Interface Board 36
1-11. Remote Control Operation 38
1-12. Adjustment Displays and Test Patterns 43
1-13. Adjustment Procedures 48
1-14. Lens Focus Adjustment 49
1-15. Registration Adjustment 54
1-16. Fine Adjustment of Each input Signal 77
1-17. Data Reset 84
1-18. To Activate the Protection on the Remote Commander 86
1-19. Picture Adjustment 87
1-20. Adjusting the Projection Wall Screen 88
1-21. List of the Messages 90

2. DISASSEMBLY

2-1. Rear Cover Removal 93
2-2. Screen Block Assembly Removal 93
2-3. Projection Block Assembly 94
2-4. Lens Removal 94
2-5. Picture Tube Removal 95
2-6. High-Voltage DC Block Assembly Removal 95
2-7. K Board, PA Board and Switching Regulator (SOPS1008B) Removal 96
2-8. DC Board Block Assembly Removal 96
2-9. E Board Block Assembly Removal 97
2-10. DM Block Assembly Removal 97
2-11. RGB Unit, Z, BA, BB and BC Boards Removal 98
2-12. LA Board Removal 98
2-13. CFA, CFB, CA (RG), CA (B) Boards Removal 99
2-14. Y, DA, DB, DM Boards Removal 100
2-15. Attachment Direction for the DC Fan 101

Section *Title* *Page*

3. CIRCUIT DESCRIPTIONS

3-1. Circuit Operation of BA Board 103
3-2. Circuit Operation of BB Board 107
3-3. Circuit Operation of CA (RG) and CA (B) Boards 111
3-4. Circuit Operation of DA Board 112
3-5. Circuit Operation of DB Board 115
3-6. Circuit Operation of DC Board 117
3-7. Circuit Operation of K Board 118
3-8. Circuit Operation of Y Board 119
3-9. Circuit Operation of PA and PB Boards 120
3-10. Circuit Operation of E Board 123
3-11. Circuit Operation of BC Board 126
3-12. Circuit Operation of Z Board 128
3-13. Circuit Operation of LA Board 129
3-14. SOPS1008B 130
3-15. Circuit Operation of C2 Board (Control Board) 131
3-16. Circuit Operation of M2 Board 131
3-17. Circuit Operation of C1 Board (Control Board) 131
3-18. Circuit Operation of M1 Board 131

4. SET-UP ADJUSTMENTS

4-1. Neck Assembly Installation 132
4-2. Adjusting Screen Inclination by Main DY 132
4-3. Sub-DY Setting 132
4-4. GREEN Focus Adjustment 132
4-5. RED Focus Adjustment 133
4-6. BLUE Focus Adjustment 133
4-7. Registration Adjustment 133
4-8. White Balance Adjustment by Maintenance Man 135

5. SAFETY ADJUSTMENTS 137

6. CIRCUIT ADJUSTMENTS

6-1. BA Board Adjustment 141
6-2. E Board Adjustment 143
6-3. DA Board Adjustment 143

Section *Title* *Page*

7. DIAGRAMS
7-1. Circuit Boards Location ··· 145
7-2. Quick Reference ··· 146
7-3. Block Diagrams ··· 147
7-4. Schematic Diagrams and Printed Wiring Boards ··· 161
Frame Schematic Diagram ··· 162
BA Board ··· 167
BB Board ··· 182
BM and QM Boards ··· 192
CA (RG) Board ··· 202
CA (B) Board ··· 211
BC, LA, LB and NB Boards ··· 218
CBR, CBG and CBB Boards ··· 225
CFA and CFB Boards ··· 229
DA Board ··· 233
Y Board ··· 247
DB Board ··· 261
DC Board ··· 270
DM Board ··· 280
PA, PB and K Boards ··· 288
E Board ··· 296
Z Board ··· 306
M1, M3B and C1 Boards ··· 312
M2 and C2 Boards ··· 318
7-5. Semiconductors ··· 324

8. EXPLODED VIEWS
8-1. Cabinet ··· 327
8-2. Power Block ··· 328
8-3. E Block and DC Block ··· 329
8-4. DM Block and C Shield Block ··· 330
8-5. CRT Block ··· 331

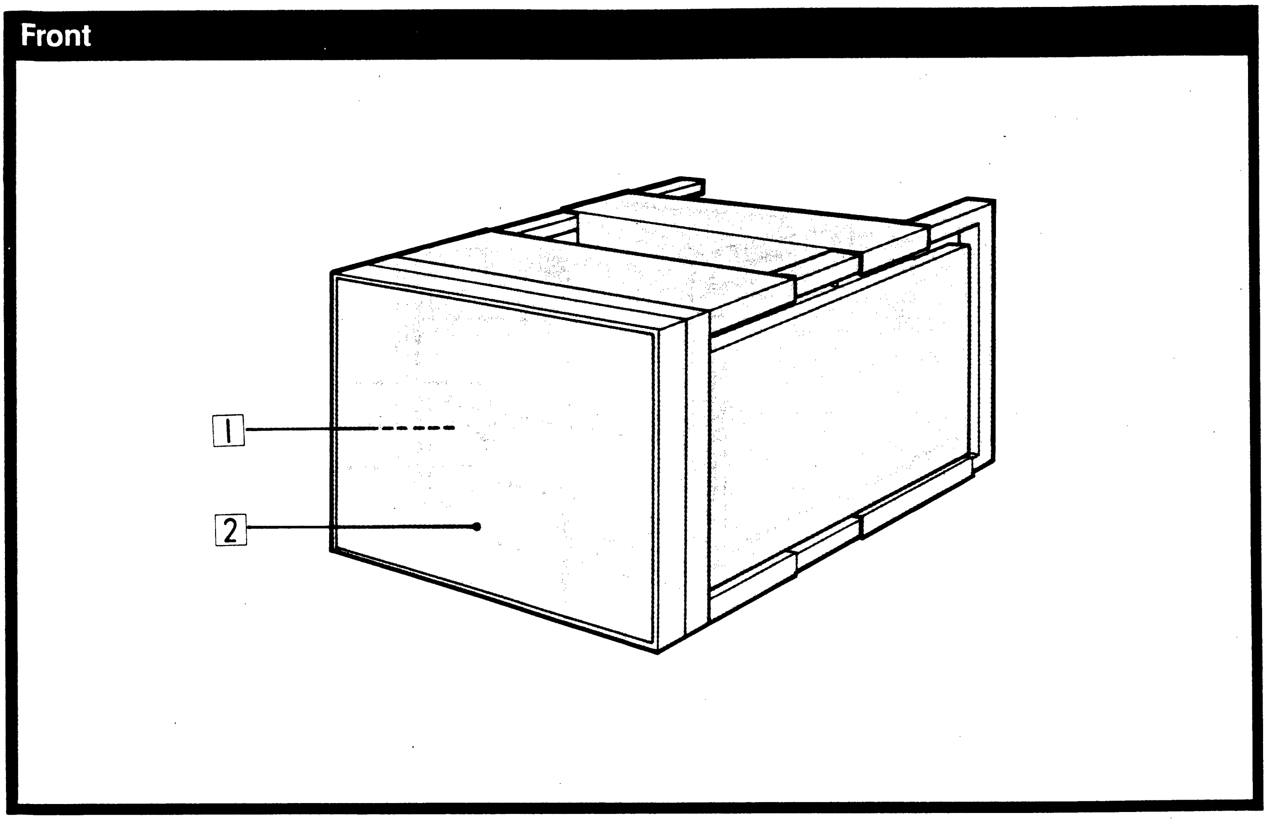
9. ELECTRICAL PARTS LIST ··· 332

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SECTION 1
GENERAL

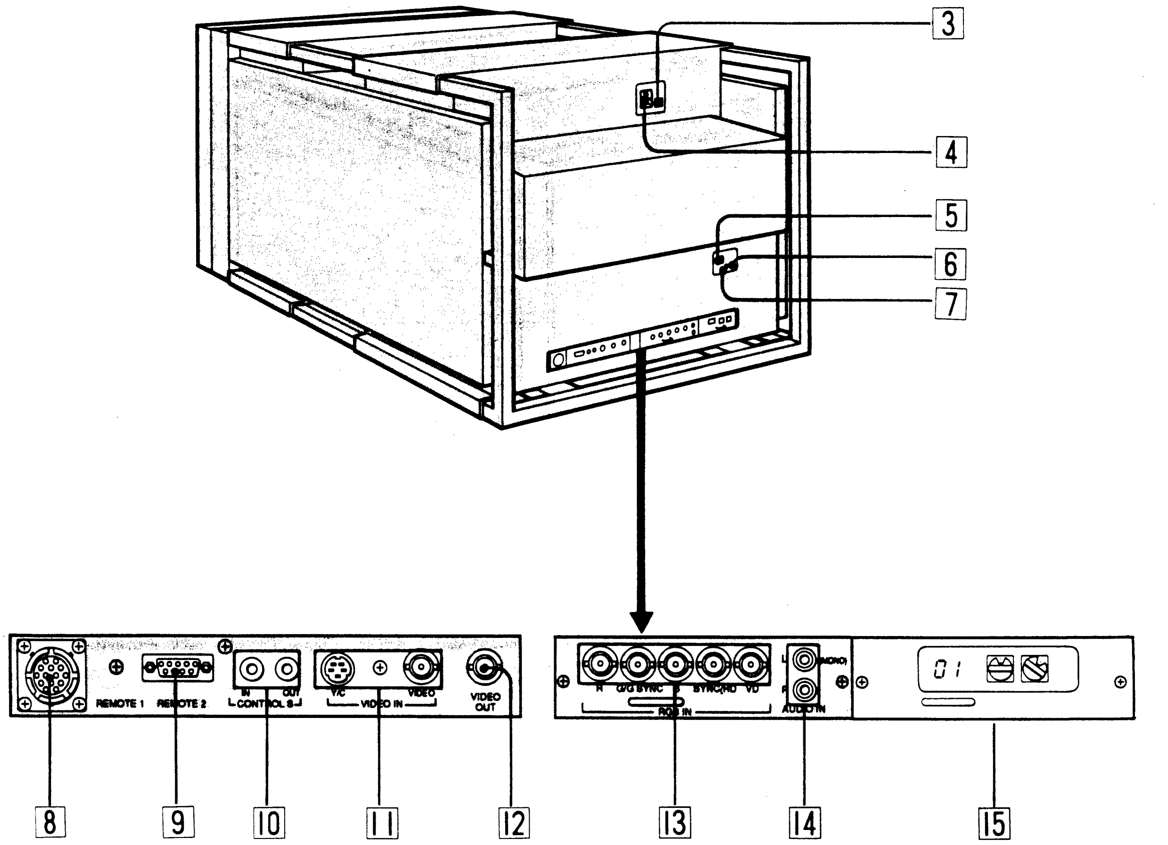
1-1. LOCATION AND FUNCTION OF CONTROLS



1 Remote control detector (Inside bottom of the screen)

2 Screen

Rear


3
4
5
6
7
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
Y/C
VIDEO
VIDEO IN
VIDEO OUT
R
G/G SYNC
B
SYNC/HD
VD
RGB IN
L
(MONO)
R
AUDIO IN
01
8
9
10
11
12
13
14
15

[3] **MAIN POWER switch (▬ ON/ ▮ OFF)**

[4] **AC IN socket**

[5] **Error code display window**
When an operational error occurs, the projector will be automatically turned off and the error code will light up here. Refer to the Installation Manual for Dealers for what error codes mean.

[6] **POWER indicator**
Green indicator is on when the power is turned on.

[7] **STANDBY indicator**
When MAIN POWER is on, the red light indicating standby will be on. When the red light is on, the projector can be controlled with the Remote Commander (not supplied).

Note
When MAIN POWER is turned off, there will be a slight delay before the red light goes off.

[8] **REMOTE 1 connector** (14-pin)
Connect to the REMOTE 1 connector of the PC-1271M switcher (not supplied).

[9] **REMOTE 2 connector** (9-pin)
Connect the RS-422 interface for interactive communication with the external equipment. Take off the red cap before use.

[10] **CONTROL S IN/OUT connectors**
Connect to the CONTROL S connectors of other Sony equipment. It is then possible to control the whole system with a single Remote Commander.
CONTROL S IN: Connect to the CONTROL S OUT jack of the RM-1271 Remote Commander (not supplied) to be used as a wired Commander.

[11] **VIDEO IN connectors**
Y/C (4-pin): Connect to the Y/C output of a VTR.
VIDEO (BNC type): Connect to the video output of a video equipment.

Note
The VIDEO connector is disconnected automatically when a cable is connected to the Y/C connector.

[12] **VIDEO OUT connector** (BNC type)
Loop-through output of the VIDEO connector. Connect to the video input of a VTR or another monitor. The signal input from Y/C connector is not output from this connector.

[13] **RGB IN connectors** (BNC type)
R, G/G SYNC, B, SYNC/HD, VD connectors:
Connect to the RGB outputs of a computer or a video camera.

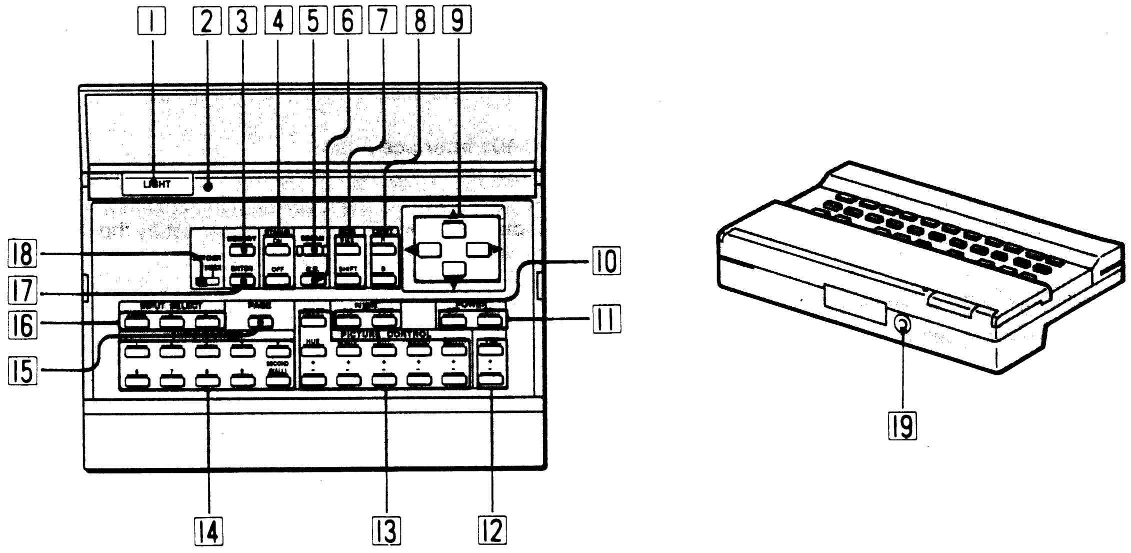
[14] **AUDIO IN jacks**
This projector cannot accept audio signals.

[15] **IFB-101 interface board**
INDEX NO. switches: When two or more projectors are connected, set the index number of each projector.
Display window: The index number set by the INDEX NO. switches is displayed.

1-2. USING THE RM-1271 REMOTE COMMANDER

All adjustments can be carried out by using the RM-1271 Remote Commander (not supplied).
When using multiple projectors, by setting index numbers, all the projectors can be operated separately or simultaneously with one Remote Commander. It is also used as a wireless Commander but in order to correctly control the projectors, connecting the Commander and the projector with the remote control cable supplied with the Commander is recommended.

Identifying Keys



1 **LIGHT button**
Press to light key indicators.
If the keys are not operated within about 30 seconds, the light automatically goes out.

2 **Transmission indicator**
The light goes on each time a key is pressed. When the indicator does not light, replace the batteries.

3 **MEMORY key**
Press to store various adjustment data into memory.

4 **STATUS ON/OFF key**
Press **OFF** to eliminate the "On-Screen display".
Press **ON** to restore the on-screen display.
Note: The PAGE display appears even when **OFF** is pressed.

5 **SECAM key**
When SECAM signal is input to the projector and you cannot get normal color, press this key. Press again to switch over to the other standard system sources, NTSC or PAL.

6 **C.B. (Clear Blue) key**
Press to make the blue color clear in RGB mode. Press again to restore the normal condition.

7 **RGB SIZE/SHIFT keys**
Press to adjust the size and shift of the picture for the RGB signal input.
SIZE: Press to enter the size adjustment mode. The size adjustment of the picture is performed using the four arrow keys.
◀ .... to reduce horizontal size
▶ .... to expand horizontal size
▲ .... to expand vertical size
▼ .... to reduce vertical size
SHIFT: Press to enter the shift adjustment mode. The shift adjustment of the picture is performed using the four arrow keys. The picture shifts according to the direction of the arrow.

8 **CENT R/B keys**
Press to enter the centering adjustment mode of the red and blue.
R: Press to enter the red centering adjustment mode.
B: Press to enter the blue centering adjustment mode.
Centering adjustments are performed using the four arrow keys.

9 **Arrow keys**
Used for various adjustment functions.

10 **PJ MUTE keys**

PIC: Press to cut off the picture. To restore the picture, press it again or CONTR +.

AUDIO: This key does not function with the RVP-400QM.

11 **POWER ON/OFF keys**
Press to turn on and off the projector.

Notes

- When the power is turned off on the Commander, all the data is saved and when the power is turned on again, the data will be recovered.
- Turn off the main power on the projector after turning off the power on the Commander. Otherwise the data will not be saved.

12 **VOL (volume) keys**
These keys do not function with the RVP-400QM.

13 **PICTURE CONTROL keys**
Press to adjust picture condition: hue, sharpness, brightness, color, and contrast. Press RESET to restore the factory preset levels.

14 **SWITCHER/INDEX keys**

When the SWITCHER/INDEX select switch is set to SWITCHER

When the PC-1271M switcher is connected, select the input from the switcher. The SECOND key is used when two switchers are connected. To select the input from the second switcher (when the switcher's SINGLE/SECOND/OTHER switch is set to SECOND), press the number keys after pressing SECOND.

When the SWITCHER/INDEX select switch is set to INDEX

When multiple projectors are connected, select the index number of the projector to be adjusted. To select, press ENTER after pressing the number keys. When adjusting all of the projectors simultaneously, press ENTER after pressing 0 (ALL).

15 **PAGE key**
Press to display and switch the following four on-screen displays. (On PAGE 1, 2, and 3, adjustment can also be done.)

PAGE 1: Displays STATUS ON/OFF, PIC MUTE ON/OFF, CLEAR BLUE ON/OFF, and SECAM ON/OFF.

PAGE 2: Displays the picture conditions; contrast, color, brightness, sharpness and hue.

PAGE 3: Displays the color temperature level and clamp setting.

PAGE 4: Displays the input signal conditions; fH, fV, H/C-sync, V-sync, Sync on Green, and input signal.

16 **INPUT SELECT keys**
Press to select the input signal.

VIDEO: to select the signal input from the VIDEO IN (Y/C or VIDEO) connectors

A: to select the signal input from the RGB IN connectors or from the connectors of an optional interface board if installed instead of the RGB IN connectors

B: to select the signal input from the connectors of an optional interface board if installed instead of the IFB-101.
(This key does not function if the IFB-101 is installed.)

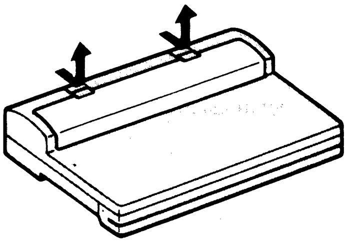
17 **ENTER key**
Press this key after pressing the SWITCHER/INDEX keys to select the index number of the projector to be adjusted. Also use this key to display the index number of each projector on its screen.

18 **SWITCHER/INDEX select switch**
Selects the function of the SWITCHER/INDEX keys. Set to SWITCHER to select the input from the PC-1271M switcher connected (not supplied). Set to INDEX to select the projector to be adjusted when two or more projectors are connected.

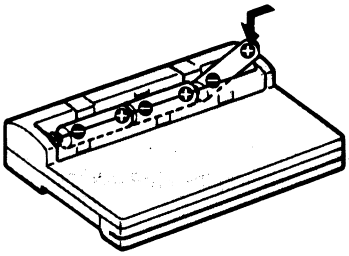
19 **CONTROL S OUT connector**
Connect the supplied remote control cable to this connector and to CONTROL S IN connector of the projector for wired Commander application.

Battery Installation

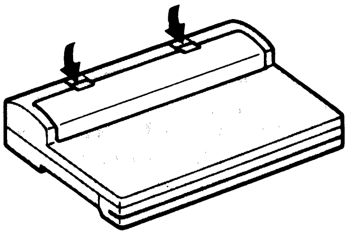
1 Push to open the lid.



2 Install three R6 (AA) batteries with the correct polarity.



3 Replace the lid.



Notes on batteries

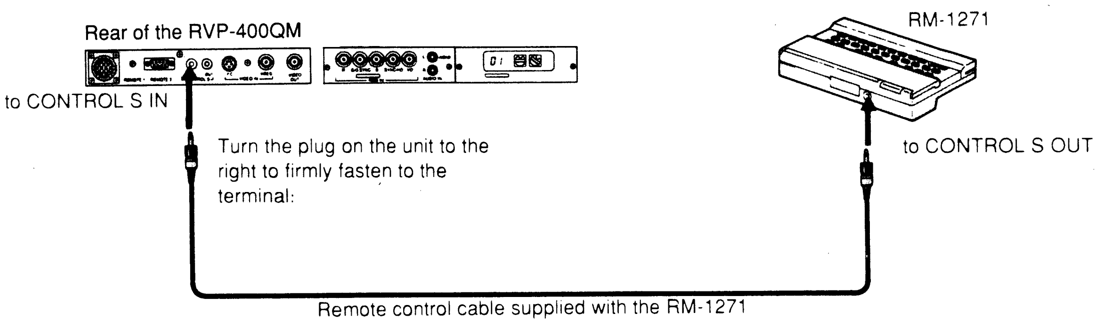
- If the projector does not operate properly, the batteries might be worn out. Replace all of them with new batteries.
- The life of the batteries depends on how often you use the Commander. If they wear out quickly, replace them with new alkaline batteries.
- To avoid damage from possible battery leakage, remove the batteries when the Commander will not be used for a long time.

Notes on wireless remote control operation

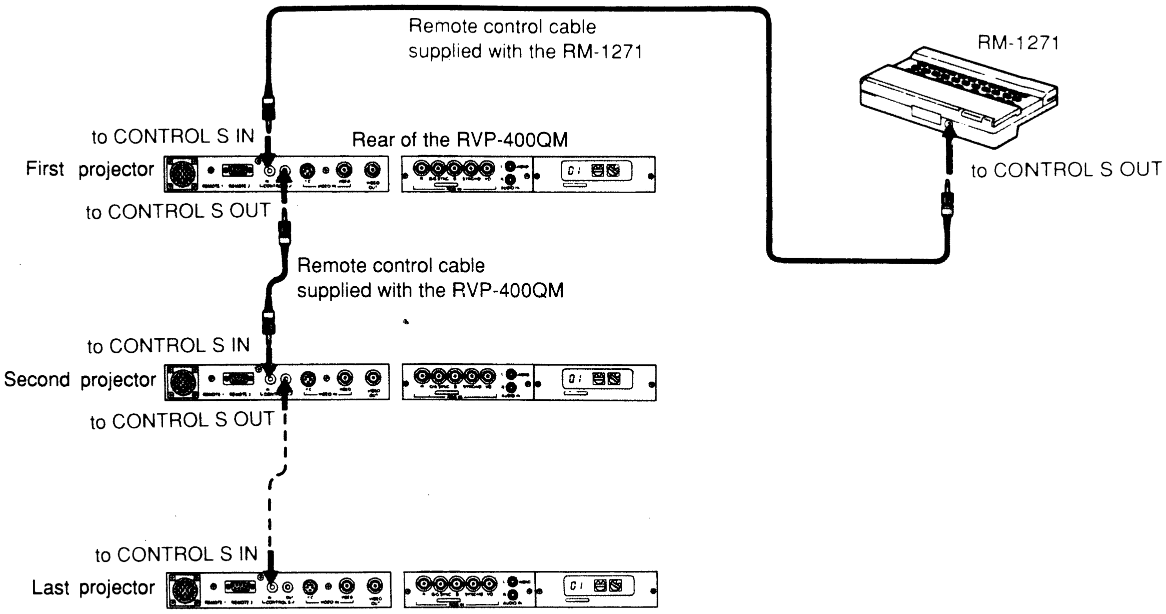
- Be sure that there are no obstructions between the Commander and the projector.
- Operable range is limited. The shorter the distance between the Commander and the projector, the wider the angle within which the Commander can control the projector.

Connecting the Remote Commander to the Projectors

Using one projector


Rear of the RVP-400QM
RM-1271
to CONTROL S IN
Turn the plug on the unit to the right to firmly fasten to the terminal:
to CONTROL S OUT
Remote control cable supplied with the RM-1271

Using multiple projectors


Remote control cable supplied with the RM-1271
RM-1271
to CONTROL S IN
Rear of the RVP-400QM
First projector
to CONTROL S OUT
to CONTROL S OUT
Remote control cable supplied with the RVP-400QM
to CONTROL S IN
Second projector
to CONTROL S OUT
to CONTROL S IN
Last projector

Notes

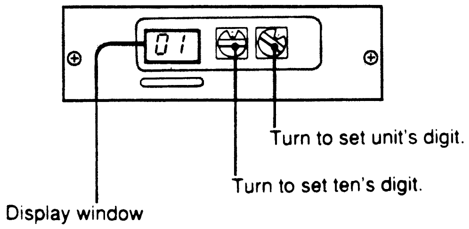
- You can connect all the projectors in any order if they are connected to each other with the remote control cables as illustrated.
- When the above connection is made, the remote control detector of the projector does not function. For wireless operation, be sure to disconnect both plugs from the projector and the Commander.

Selecting the Projector to Be Adjusted

When two or more projectors are connected to a multivideo processor, a projection-wall display can be constructed.
In this case, by setting the index number of each projector, all the projectors can be remotely controlled separately or simultaneously with a single Remote Commander.

Setting the index number

Use the INDEX NO. switches on the IFB-101 interface board at the rear of the projector. You can set numbers from 00 to 99. The number entered is shown on the display window.



ex. Set the index numbers in the following order.

16 projectors (4 × 4 screens)

01	02	03	04
05	06	07	08
09	10	11	12
13	14	15	16

9 projectors (3 × 3 screens)

01	02	03
04	05	06
07	08	09

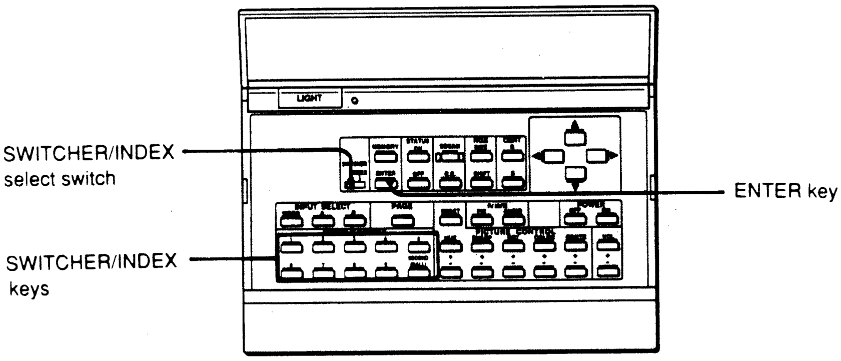
4 projectors (2 × 2 screens)

01	02
03	04

(The illustrations show the front view of the projectors.)

Selecting the projector

Use the SWITCHER/INDEX and ENTER keys of the Commander.


SWITCHER/INDEX select switch
SWITCHER/INDEX keys
ENTER key
LIGHT
STATUS
INPUT SELECT
POWER
PICTURE CONTROL

1 Set the SWITCHER/INDEX select switch to INDEX.

2 Press the desired SWITCHER/INDEX keys and then ENTER.

ex. To adjust projector 01: 1 ⟶ ENTER
To adjust projector 11: 1 ⟶ 1 ⟶ ENTER
To adjust all the projectors: 0/ALL ⟶ ENTER
To adjust projector 00: 0/ALL ⟶ 0/ALL ⟶ ENTER

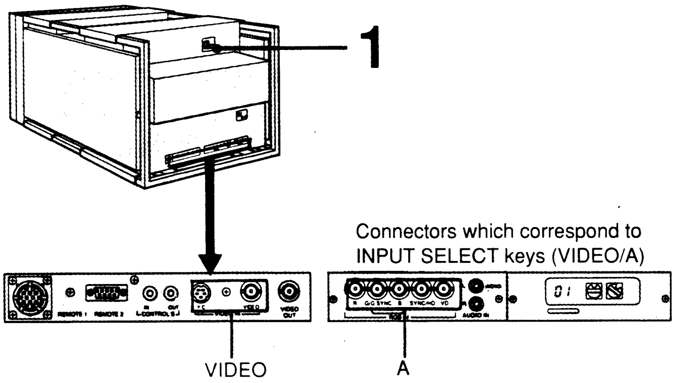
The index number will blink for 3 seconds on the screen of the selected projector.

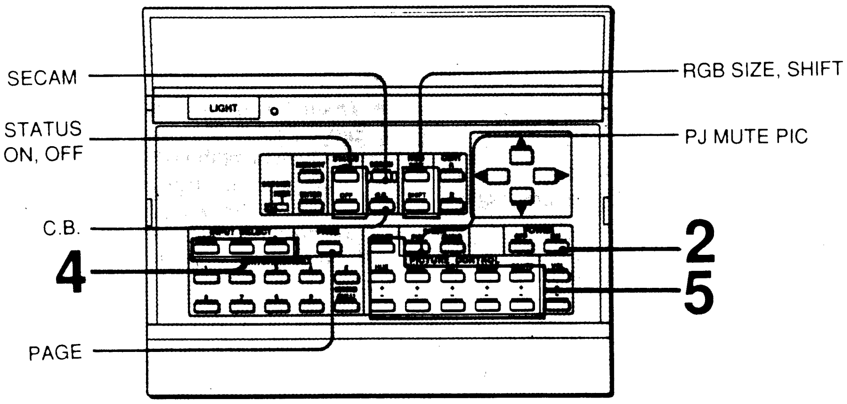
Notes

- When the power of the system is turned on, all the projectors can be adjusted simultaneously. The index numbers of all the projectors will blink.
- To display the index numbers on the screen, press the ENTER key only. All the index numbers light up on the screen. Only the index number of the projector that can be adjusted will blink.

1-3. PROJECTING

Use the keys of the RM-1271 Remote Commander (not supplied) for operation.


1
Connectors which correspond to INPUT SELECT keys (VIDEO/A)
VIDEO
A


SECAM
STATUS ON, OFF
C.B.
4
PAGE
LIGHT
RGB SIZE, SHIFT
PJ MUTE PIC
2
5

1 **Depress MAIN POWER at the rear (▬ ON).**

2 **Press POWER ON on the Remote Commander.**

3 **Turn on the connected equipment.**

4 **Select the input signal to be projected by pressing INPUT SELECT (VIDEO or A).**

VIDEO: to select the signal input from the VIDEO IN (Y/C or VIDEO) connectors

A: to select the signal input from the RGB IN connectors or connectors of an interface board if installed instead of the RGB IN connectors

5 **Adjust the picture.**

To cut the on-screen display

Press STATUS OFF.
However, PAGE is displayed even when in OFF mode.
To restore the on-screen display, press STATUS ON.

To cut off the picture

Press PJ MUTE PIC.
To restore the previous brightness level, press PJ MUTE PIC again or CONTR +.

Notes on projecting a picture input from the RGB IN connectors

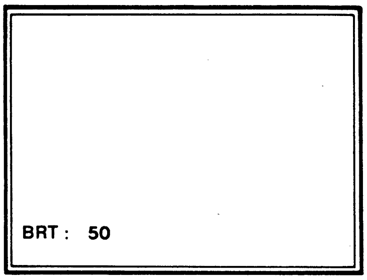
- To make the blue color clear, press C.B. Press the key again to restore the normal condition.
- If necessary, adjust the size and shift of the picture using RGB SIZE/SHIFT and arrow keys.

If the SECAM color source is incorrect

Press SECAM. Press it again to switch over to other standard system sources, NTSC or PAL.
If you wish to keep the C.B. ON/OFF or SECAM ON/OFF setting, store the data.

Adjusting the Picture

Use the PICTURE CONTROL keys.
The adjustment levels are digitally displayed on the screen having a range of MIN, 1, 2, ..., 98, 99, MAX.



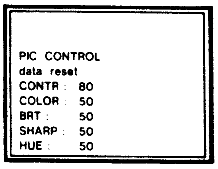
BRT : 50

CONTR +/– keys	+ : to increase picture contrast – : to decrease picture contrast
COLOR +/– keys	+ : to increase color intensity – : to decrease color intensity
BRT +/– keys	+ : to make the picture brighter – : to make the picture darker
SHARP +/– keys	+ : to make the picture sharper – : to make the picture softer
HUE +/– keys	+ : to make skin tones greenish – : to make skin tones purplish

- The COLOR, SHARP and HUE controls do not function on the picture input from RGB IN.
- The HUE control does not function with PAL or SECAM color source.

To restore the factory preset levels

Press RESET. The factory preset levels will be displayed on the screen.



PIC CONTROL
data reset
CONTR : 80
COLOR : 50
BRT : 50
SHARP : 50
HUE : 50

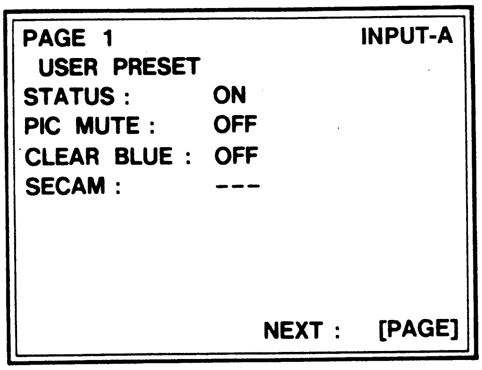
Displaying the Current Control Settings and Conditions

Press PAGE for displaying the following four on-screen displays. Adjustment can also be done on PAGE 1, 2 and 3. The displays will switch as follows every time PAGE is pressed:

PAGE 1 ⟶ PAGE 2 ⟶ PAGE 3 ⟶ PAGE 4

↑ ——— OFF ⟵ ———

PAGE 1



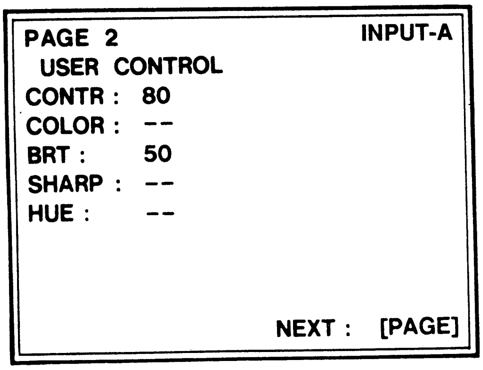
```
PAGE 1                    INPUT-A
 USER PRESET
STATUS :        ON
PIC MUTE :      OFF
CLEAR BLUE :    OFF
SECAM :         ---



                NEXT :   [PAGE]
```

The STATUS ON/OFF, PIC MUTE ON/OFF, CLEAR BLUE (C.B.) ON/OFF and SECAM ON/OFF settings are displayed. "- - -" indicates that the control does not function with the current input signal.
To change the settings, adjust with the appropriate key.

PAGE 2

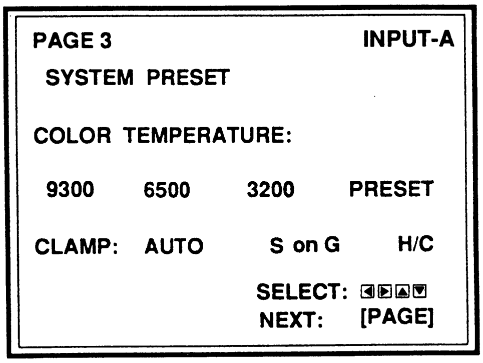


```
PAGE 2                    INPUT-A
 USER CONTROL
CONTR :  80
COLOR :  --
BRT :    50
SHARP :  --
HUE :    --


                NEXT :   [PAGE]
```

The picture conditions; contrast, color, brightness, sharpness and hue levels are displayed.
"- -" indicates that the control does not function with the current input signal. (In this case, the input signal is RGB.)
To change the levels, adjust with the PICTURE CONTROL keys.

PAGE 3



PAGE 3 INPUT-A
SYSTEM PRESET

COLOR TEMPERATURE:

9300 6500 3200 PRESET

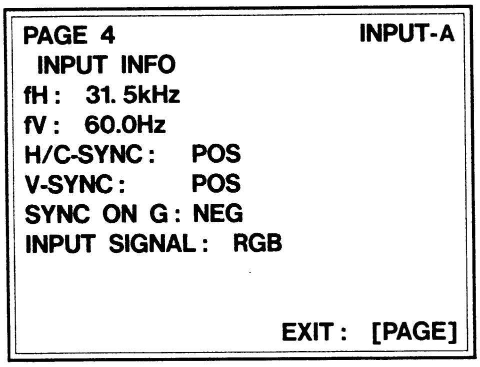
CLAMP: AUTO S on G H/C

SELECT: ◀▶▲▼
NEXT: [PAGE]

The color temperature and clamp settings are displayed.
The selected item blinks in green.
To change the setting, adjust by pressing ◀ , ▶ , ▲ , and ▼ keys.
The color temperature setting can be saved by pressing the MEMORY key.
For details of the clamp setting, see "If the luminance of the picture is incorrect — clamp setting".

Note
"CLAMP" is not displayed when the input mode is VIDEO.

PAGE 4



PAGE 4 INPUT-A
INPUT INFO
fH : 31. 5kHz
fV : 60.0Hz
H/C-SYNC : POS
V-SYNC : POS
SYNC ON G : NEG
INPUT SIGNAL : RGB

EXIT : [PAGE]

The signal input conditions are displayed.

fH: Horizontal frequency of the input signal
fV: Vertical frequency of the input signal
H/C-SYNC: Polarity of the H/C-SYNC
V-SYNC: Polarity of the V-SYNC
SYNC ON G: Polarity of the SYNC on the Green
INPUT SIGNAL: Current input signal

POS: positive
NEG: negative
– – –: no input

Each indication under INPUT SIGNAL means the following input signal:

Y/C:	S video signal
RGB:	RGB signal
NTSC:	Video signal of NTSC system
PAL:	Video signal of PAL system
SECAM:	Video signal of SECAM system
B&W:	Black and white video signal
Internal Oscillation:	Internal oscillation mode when no signal is input

The projector operates with the sync signal indicated in green.

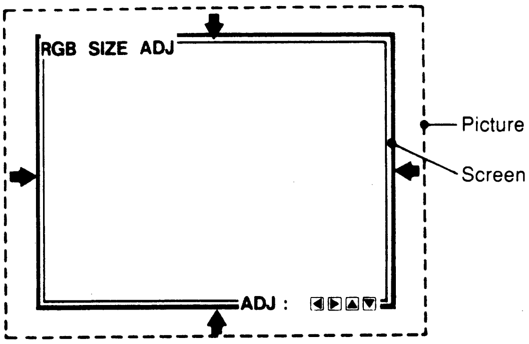
RGB SIZE and SHIFT Adjustment

If necessary, adjust the size and shift of the picture using the RGB SIZE/SHIFT and arrow keys.
This adjustment does not function with input signal from the VIDEO IN connectors.

After the RGB SIZE/SHIFT adjustment, press the INPUT SELECT B key to cut the on-screen display. If you wish to keep the current adjustment setting, save the data

RGB SIZE adjustment

If size of the picture does not fit the screen, adjust RGB SIZE.

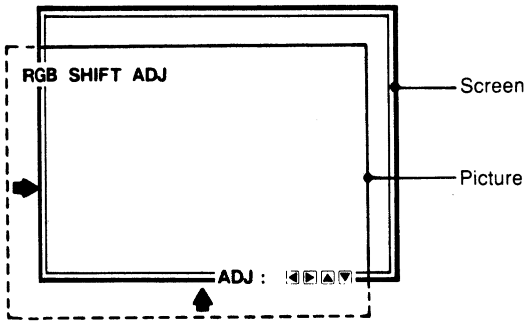


1 **Press RGB SIZE.**

2 **Adjust by pressing arrow keys so that the picture fits the screen.**
- ◀ to reduce horizontal size
- ▶ to expand horizontal size
- ▲ to expand vertical size
- ▼ to reduce vertical size

RGB SHIFT adjustment

If the picture needs to be shifted to fit the screen, adjust RGB SHIFT.



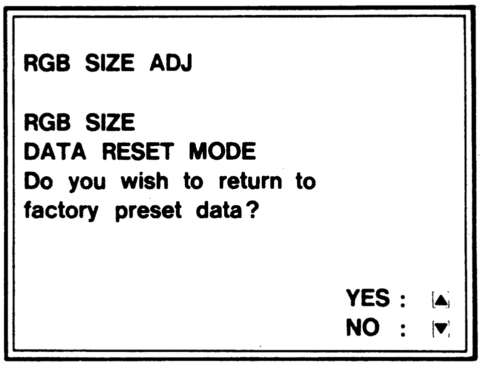
1 **Press RGB SHIFT.**

2 **Adjust by pressing arrow keys so that the picture fits the screen.**
The picture shifts according to the direction of the arrow.

Resetting RGB SIZE/SHIFT to factory preset condition

1 **Press RGB SIZE or SHIFT.**

2 **Press ◄ and ► keys simultaneously.**
The following on-screen display appears on the screen.

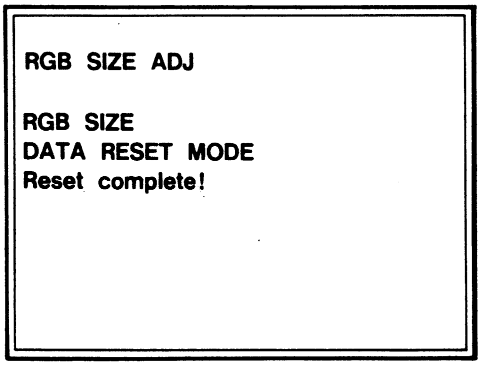


RGB SIZE ADJ

RGB SIZE
DATA RESET MODE
Do you wish to return to
factory preset data?

YES : ▲
NO : ▼

3 **Press ▲ key.**
The following on-screen display appears on the screen to confirm that resetting was completed.
To keep the current setting instead of resetting, press ▼ key.



RGB SIZE ADJ

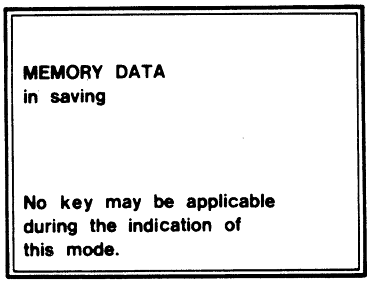
RGB SIZE
DATA RESET MODE
Reset complete!

Storing the Adjustment Levels

If you wish to save the picture adjustment changes, you must store them in memory.
The following conditions can be stored:

SECAM ON/OFF setting
CLEAR BLUE (C.B.) ON/OFF setting
COLOR TEMPERATURE setting on PAGE 3
RGB SIZE/SHIFT adjustment levels

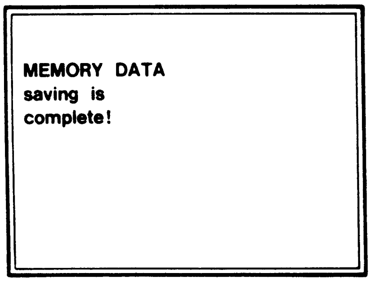
1 **After the adjustment, press MEMORY .**
The following on-screen display appears to indicate that storing has begun. While the display is on, no other key will function.



MEMORY DATA
in saving

No key may be applicable
during the indication of
this mode.

2 **The following on-screen display appears to confirm that storing has been completed.**



MEMORY DATA
saving is
complete!

Messages on the Screen

The meaning of the color
Four colors are used in the letters of on-screen display.

Color	Meaning
Green	Function and condition
Cyan	Operation guide and messages
Yellow	Caution and error messages
White	Item being adjusted

Error message
When you perform an error in operation, the following messages will be displayed.

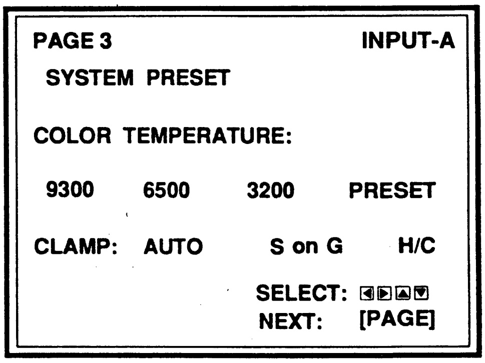
Messages	Meaning
Not applicable!	The control dose not function with the current input.
PIC MUTE	PIC MUTE is set to ON. If you want to adjust the picture controls, press PJ MUTE PIC to cancel the PIC MUTE mode.
Overflow!	RGB SIZE/SHIFT and CENT R/B adjustment range limit has been reached.
OFF	STATUS is set to OFF to cut the on-screen display. To restore the on-screen display, press STATUS ON.

If the Luminance of the Picture is Incorrect — Clamp Setting

Clamp is used as a standard for setting the black level of the picture correctly. The standard position of the clamp depends on the kind of the sync signal. Normally the CPU may judges the signal and sets the clamp position automatically.

However, the CPU may misjudge the signal because of noise. If the luminance of the picture seems to be incorrect (too dark, the black color is too light, or the luminance is unstable), the clamp position may need to be changed. In such case, change the clamp position following the procedure below.

1 **Press PAGE three times.**



PAGE 3 INPUT-A
SYSTEM PRESET

COLOR TEMPERATURE:

9300 6500 3200 PRESET

CLAMP: AUTO S on G H/C

SELECT: ◀▶▲▼
NEXT: [PAGE]

2 **Select the clamp position by pressing ◄ , ► , ▲ and ▼ keys.**

AUTO : Automatic setting mode. Normally, set to this position.
S on G : If the black color is too light or seems to be green, set to this position.
H/C : If the picture is too dark or the luminance is unstable, set to this position.

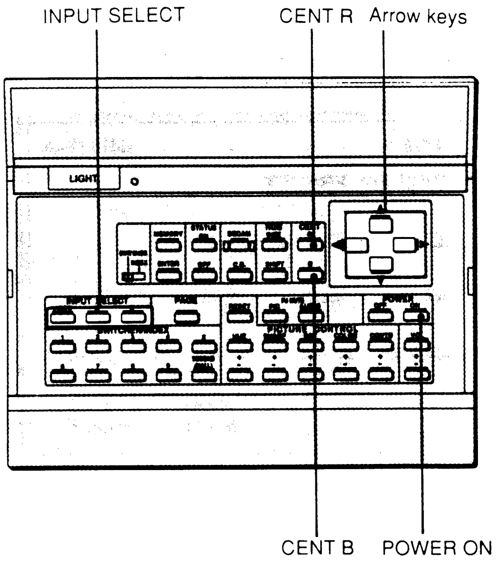
3 **Press MEMORY to save the data.**

If the luminance is still incorrect after changing the clamp setting

There may be other problem with the input signal or connection. Check the input signal.

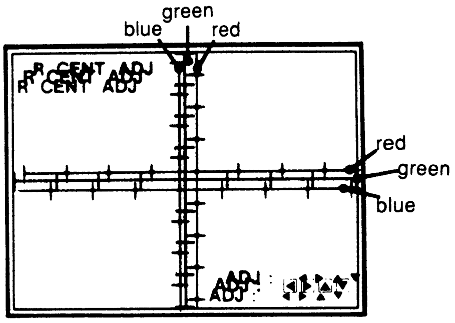
1-4. CENTERING ADJUSTMENT

The three colors, red, green and blue must converge for proper projection. If they do not converge, centering adjustment is necessary.


INPUT SELECT
CENT R
Arrow keys
LIGHT
CENT B
POWER ON

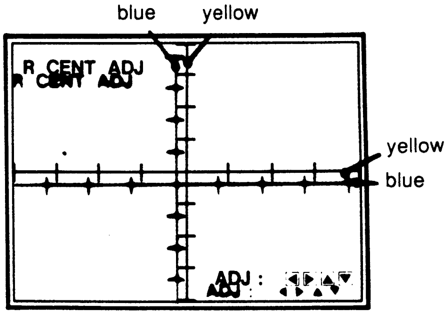
1 **Press the MAIN POWER switch of the projector and press POWER ON of the Remote Commander.**

2 **Press CENT R.**
The built-in cross hair test pattern will be displayed and the red line will be operable.


green
blue
red
R CENT ADJ
red
green
blue
ADJ :

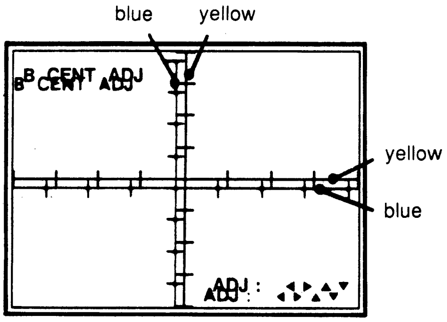
(Three colors not converged.)

3 **Press arrow keys to move the red line until the red and green lines converge and are seen as yellow.**
The red line will move according to the direction of the arrow.

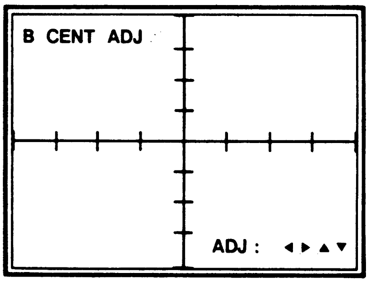

blue
yellow
R CENT ADJ
yellow
blue
ADJ :

(Green and red converged.)

4 **Press CENT B.**
The blue line will be operable.


blue
yellow
B CENT ADJ
yellow
blue
ADJ : ◀ ▶ ▲ ▼

5 **Press arrow keys to move the blue line until the blue and yellow lines converge.**
When all three color lines converge, the pattern will be seen as white.


B CENT ADJ
ADJ : ◀ ▶ ▲ ▼

(Three colors converged.)

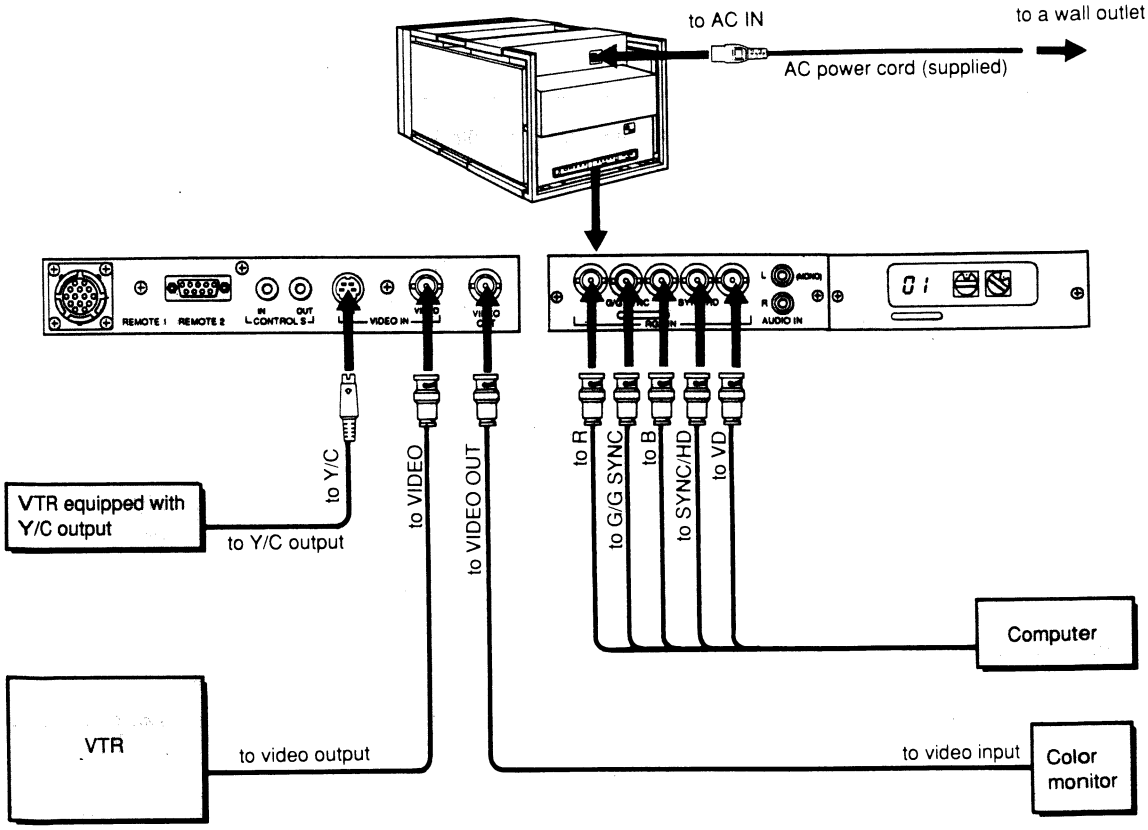
6 **Press the selected INPUT SELECT key (VIDEO or A) to exit the test pattern mode.**

1-5. SYSTEM CONNECTIONS

Notes on connection

- First, make sure that the power to each piece of equipment is turned off.
- Use the connecting cables suitable for the equipment to be connected.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- To disconnect the cable, pull it out by grasping the plug. Never pull the cable itself.
- For connection to the REMOTE 1 connector, the connecting cable may be extended to maximum 50 m for VIDEO input and 25 m for RGB input. If the connecting cable is longer than that, picture quality may be impaired somewhat. To extend the connecting cable for RGB input longer than 25 m, please consult the qualified Sony personnel.
- Read the instruction manual of the equipment to be connected.

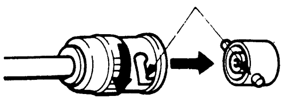
Connecting to the Projector Directly


to AC IN
to a wall outlet
AC power cord (supplied)
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
VIDEO IN
AUDIO IN
to Y/C
to VIDEO
to VIDEO OUT
to R
to G/G SYNC
to B
to SYNC/HD
to VD
VTR equipped with Y/C output
to Y/C output
Computer
VTR
to video output
to video input
Color monitor

Notes

- The VIDEO connector is disconnected automatically when a cable is connected to the Y/C connector.
- The external sync signal has priority over the internal sync signal. However, when the external sync signal is incomplete, the internal sync signal has priority.

How to connect a BNC connector


① Align and insert.

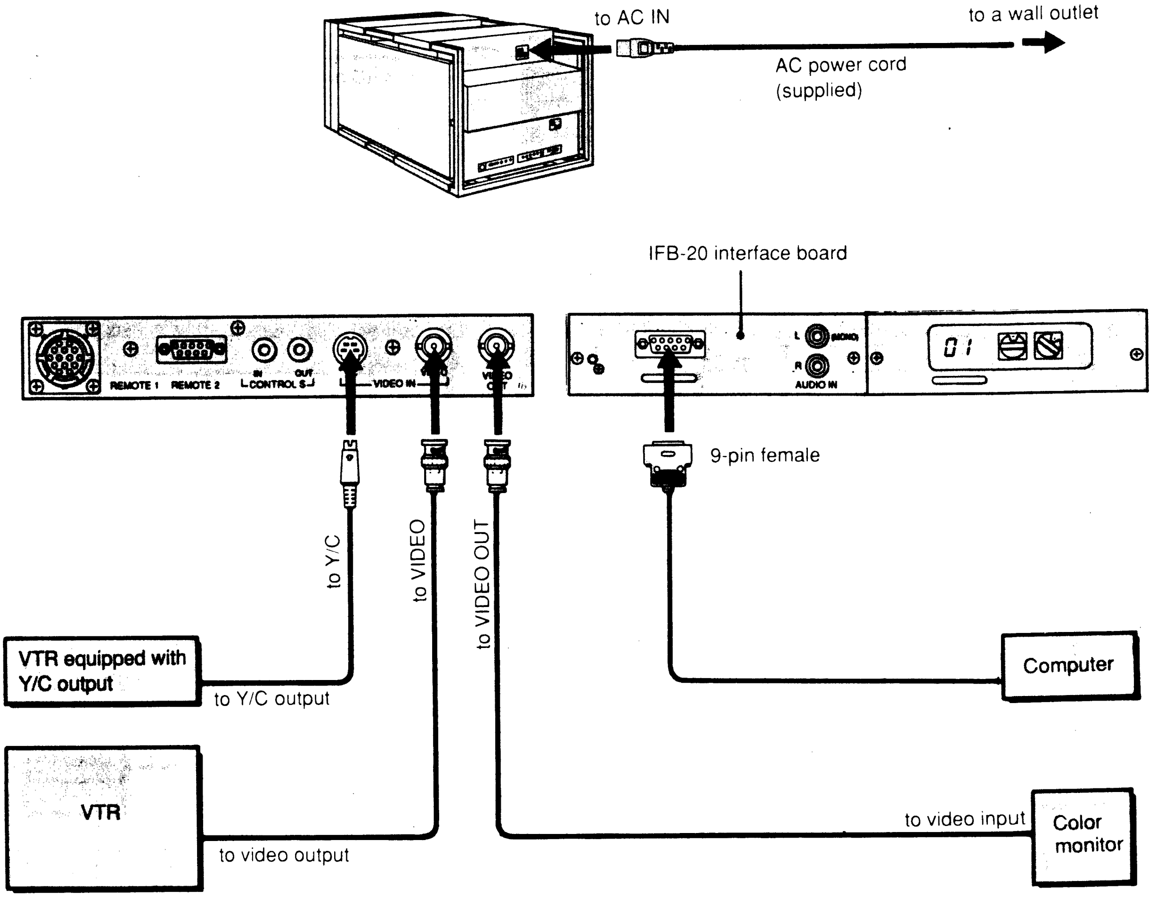
② Turn clockwise.

Using the Interface Board

Instead of the RGB IN connectors, use the optional IFB-20, 30, or 1000 interface board in order to change the input connectors to match those of your computer.

To select the input, press the INPUT SELECT A key on the Commander.

Example: Using the IFB-20 interface board


to AC IN
to a wall outlet
AC power cord
(supplied)
IFB-20 interface board
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
VIDEO IN
VIDEO OUT
L (MONO)
R
AUDIO IN
01
9-pin female
to Y/C
to VIDEO
to VIDEO OUT
VTR equipped with Y/C output
to Y/C output
VTR
to video output
Computer
to video input
Color monitor

For installing the interface board, consult the qualified Sony personnel.

Note

It is also possible to install an optional interface board instead of the IFB-101 interface board. To select the input, press the INPUT SELECT B key on the Commander. In this case, however, the INDEX select switch, INDEX keys and ENTER key on the Remote Commander do not function.

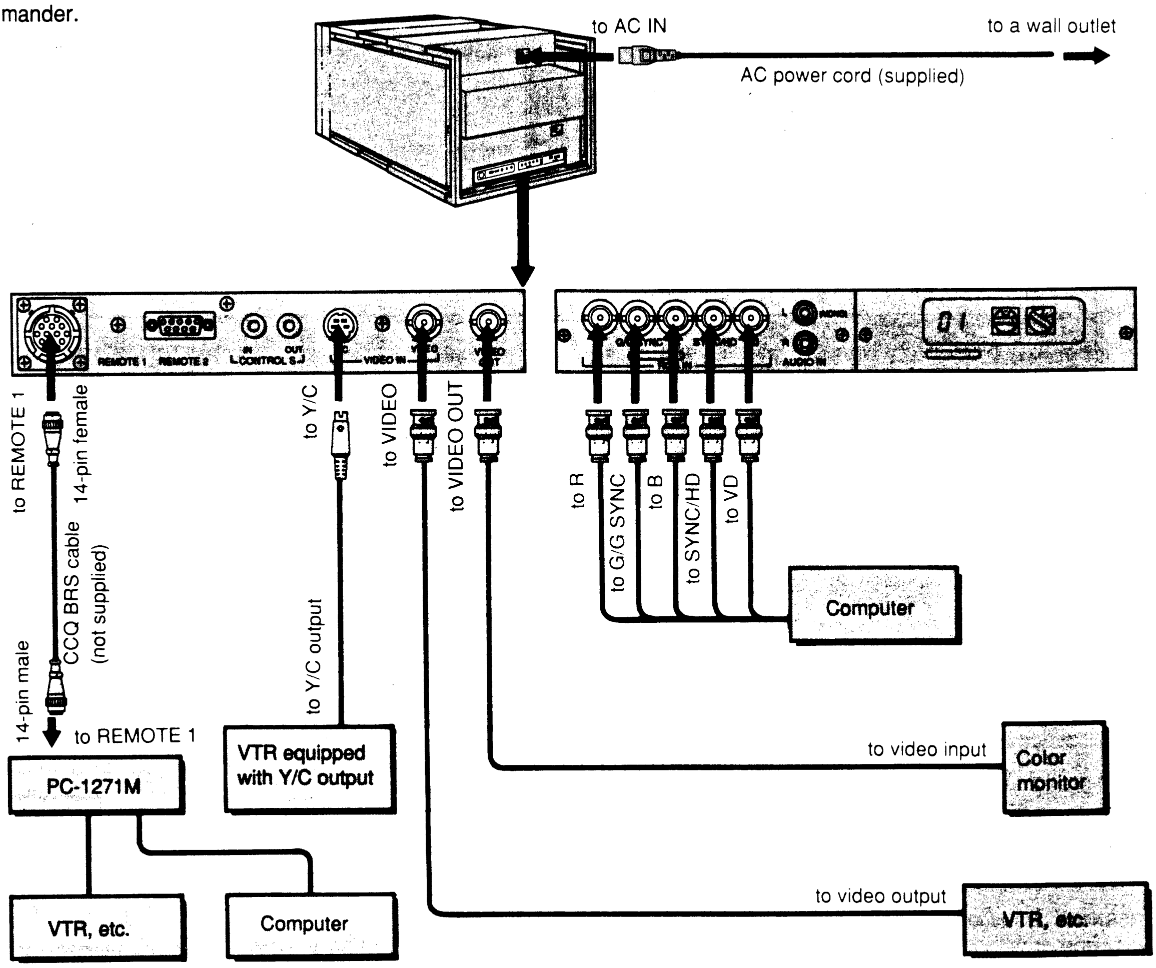
Notes

- Do not leave a still picture from a computer or video disc player projected for more than one hour.
- Depending on the computer, the dimensions of the character display area may change or the picture may be uncentered. This is not a fault of the projector.
- If your computer is equipped with a composite video output, connect it to the VIDEO IN connector of the projector.
- If necessary, adjust the size and shift of the picture using the RGB SIZE/SHIFT and arrow keys.

Using the Switcher

Use the PC-1271M switcher (not supplied) for connecting various video equipment. The input is selected by pressing the SWITCHER/INDEX keys on the Remote Commander.

To select the input, set the SWITCHER/INDEX select switch to SWITCHER and then press the SWITCHER/INDEX key.

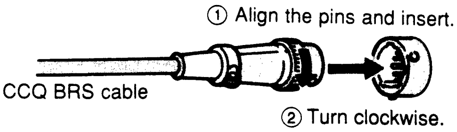

to AC IN
to a wall outlet
AC power cord (supplied)
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
Y/C
VIDEO IN
VIDEO OUT
AUDIO IN
to REMOTE 1
14-pin female
CCQ BRS cable
(not supplied)
14-pin male
to REMOTE 1
PC-1271M
VTR, etc.
Computer
to Y/C
to Y/C output
VTR equipped with Y/C output
to VIDEO
to VIDEO OUT
to video input
Color monitor
to video output
VTR, etc.
to R
to G/G SYNC
to B
to SYNC/HD
to VD
Computer

The equipment can be connected to the VIDEO IN and RGB IN connectors even when the switcher is connected.

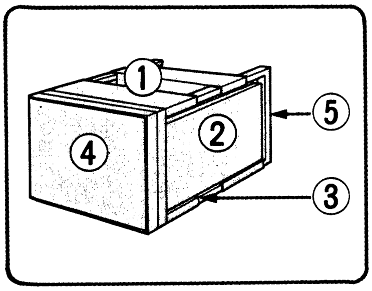
Using the SWITCHER/INDEX keys on the Remote Commander
First, set the SWITCHER/INDEX select switch to SWITCHER. Press the number key from 1 to 8 to select the input number of the switcher.

The SECOND key is used when there are two switchers. To control the second switcher (whose SINGLE/SECOND/OTHER switch is set to SECOND), first press SECOND and then the number key.

How to connect a 14-pin connector

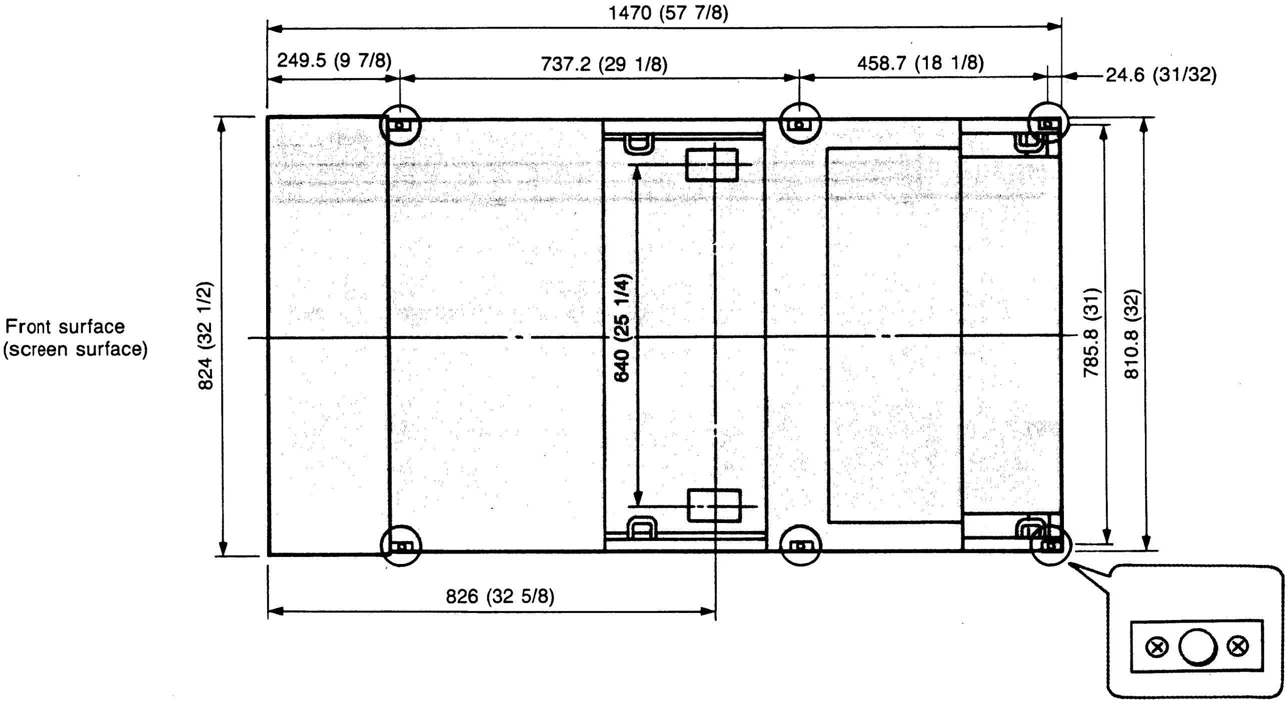

① Align the pins and insert.
CCQ BRS cable
② Turn clockwise.

1-6. DIMENSIONS

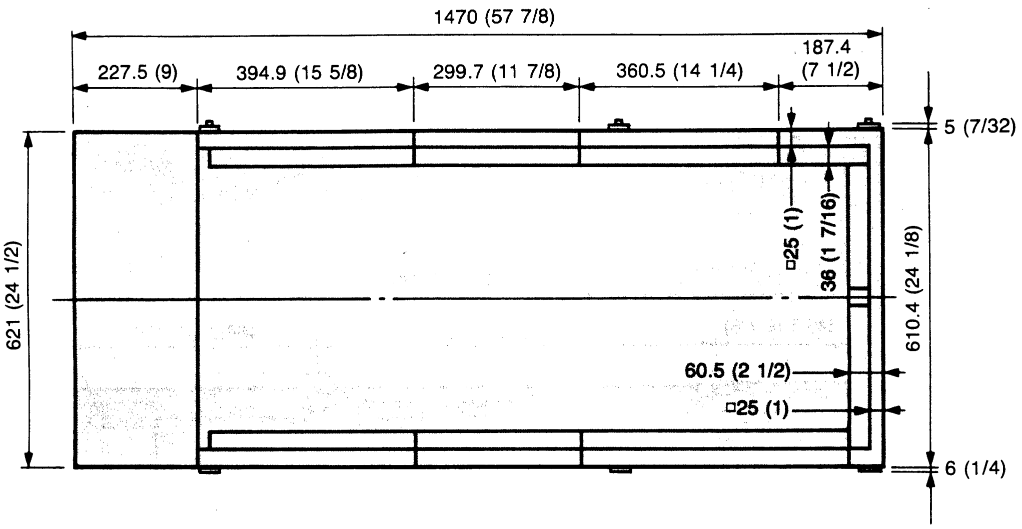


unit: mm (inch)

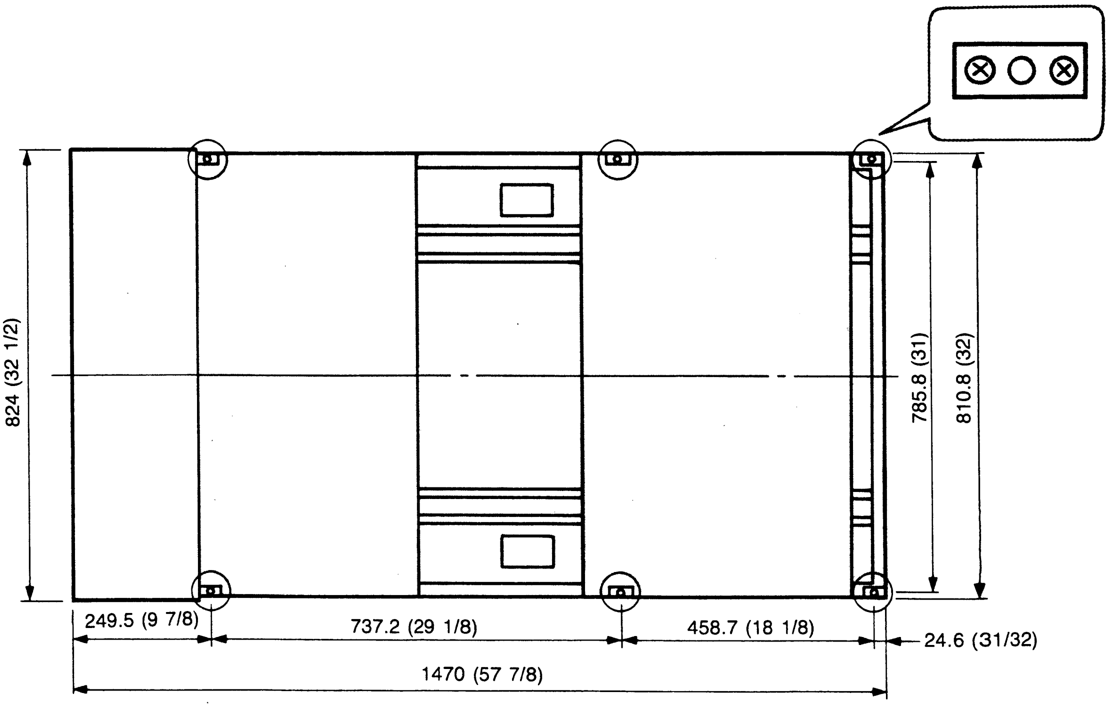
① Top view


1470 (57 7/8)
249.5 (9 7/8)
737.2 (29 1/8)
458.7 (18 1/8)
24.6 (31/32)
Front surface
(screen surface)
824 (32 1/2)
640 (25 1/4)
785.8 (31)
810.8 (32)
826 (32 5/8)

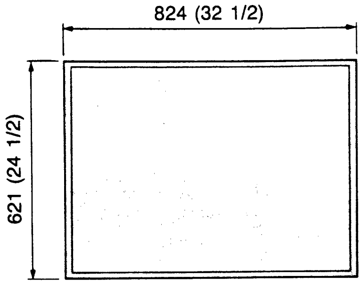
② Side view


1470 (57 7/8)
227.5 (9)
394.9 (15 5/8)
299.7 (11 7/8)
360.5 (14 1/4)
187.4
(7 1/2)
5 (7/32)
621 (24 1/2)
□25 (1)
36 (1 7/16)
610.4 (24 1/8)
60.5 (2 1/2)
□25 (1)
6 (1/4)

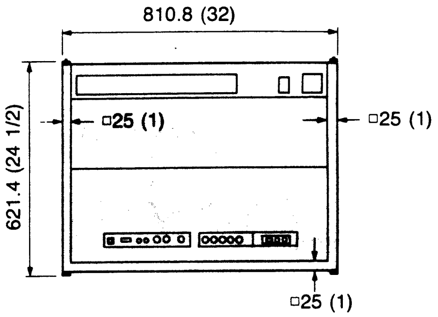
③ Bottom view


824 (32 1/2)
785.8 (31)
810.8 (32)
249.5 (9 7/8)
737.2 (29 1/8)
458.7 (18 1/8)
24.6 (31/32)
1470 (57 7/8)

④ Front view

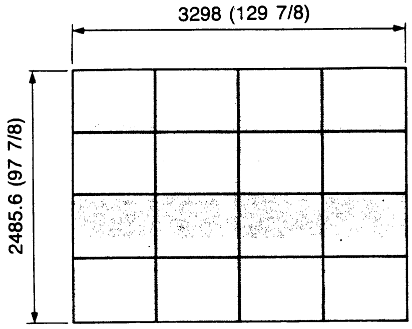

824 (32 1/2)
621 (24 1/2)

⑤ Back view


810.8 (32)
621.4 (24 1/2)
□25 (1)
□25 (1)
□25 (1)

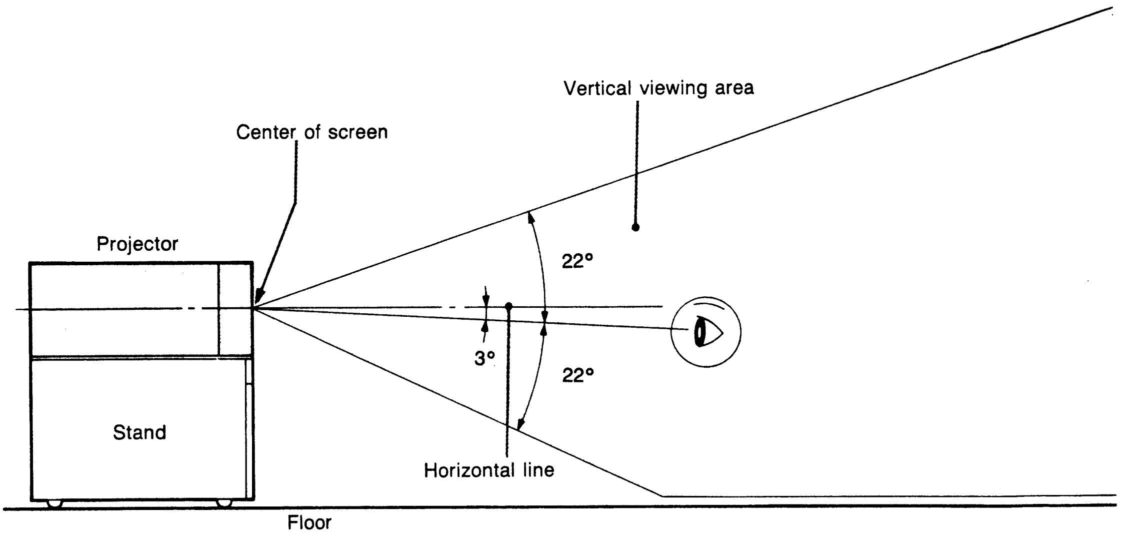
Dimensions of projection wall

Example: 16 units (4 × 4 screens)

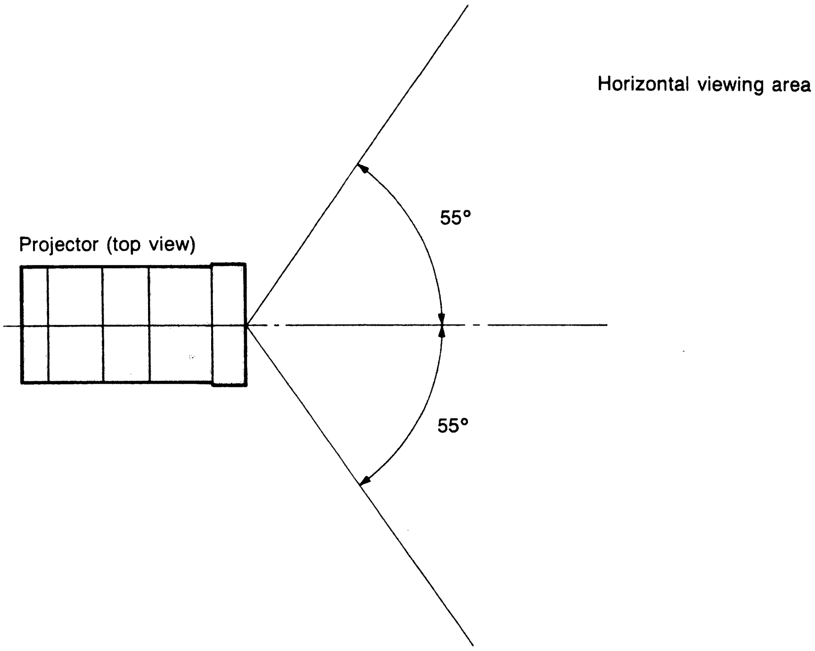

3298 (129 7/8)
2485.6 (97 7/8)

1-7. APPROPRIATE VIEWING AREA

Vertical viewing area


Vertical viewing area
Center of screen
Projector
22°
3°
22°
Stand
Horizontal line
Floor

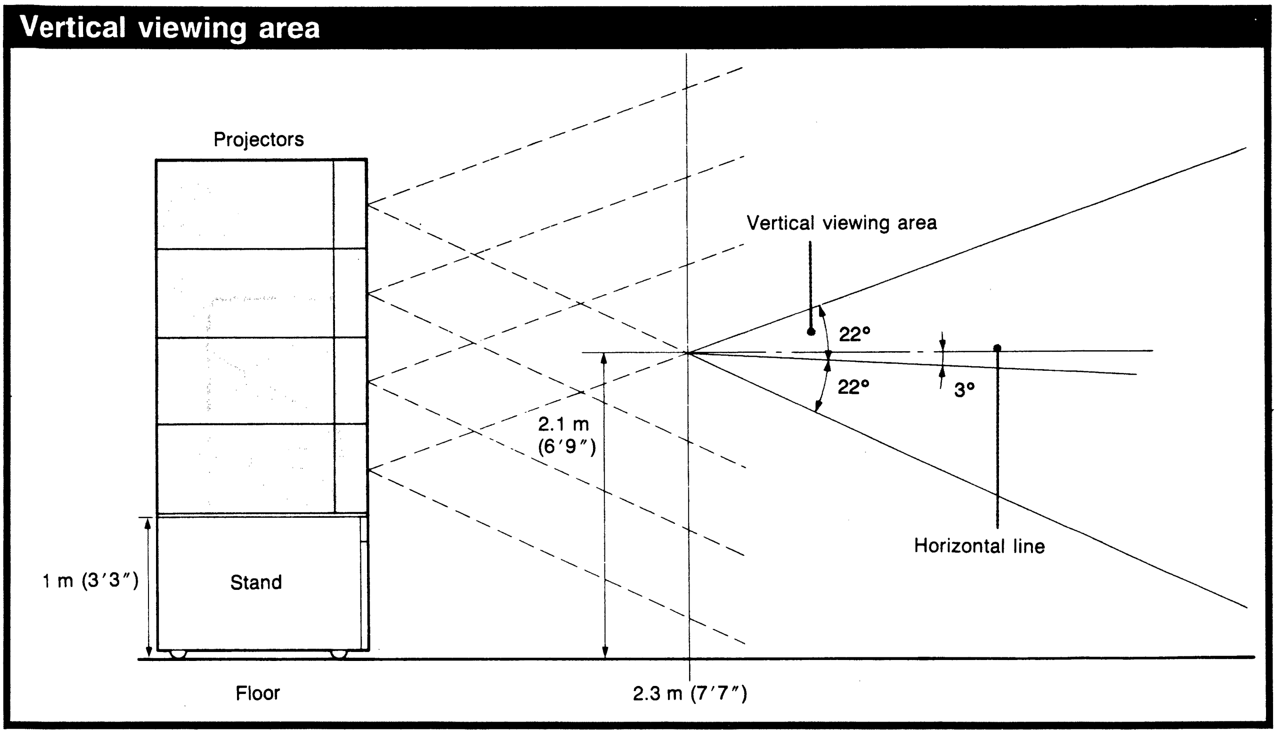
Horizontal viewing area


Horizontal viewing area
55°
Projector (top view)
55°

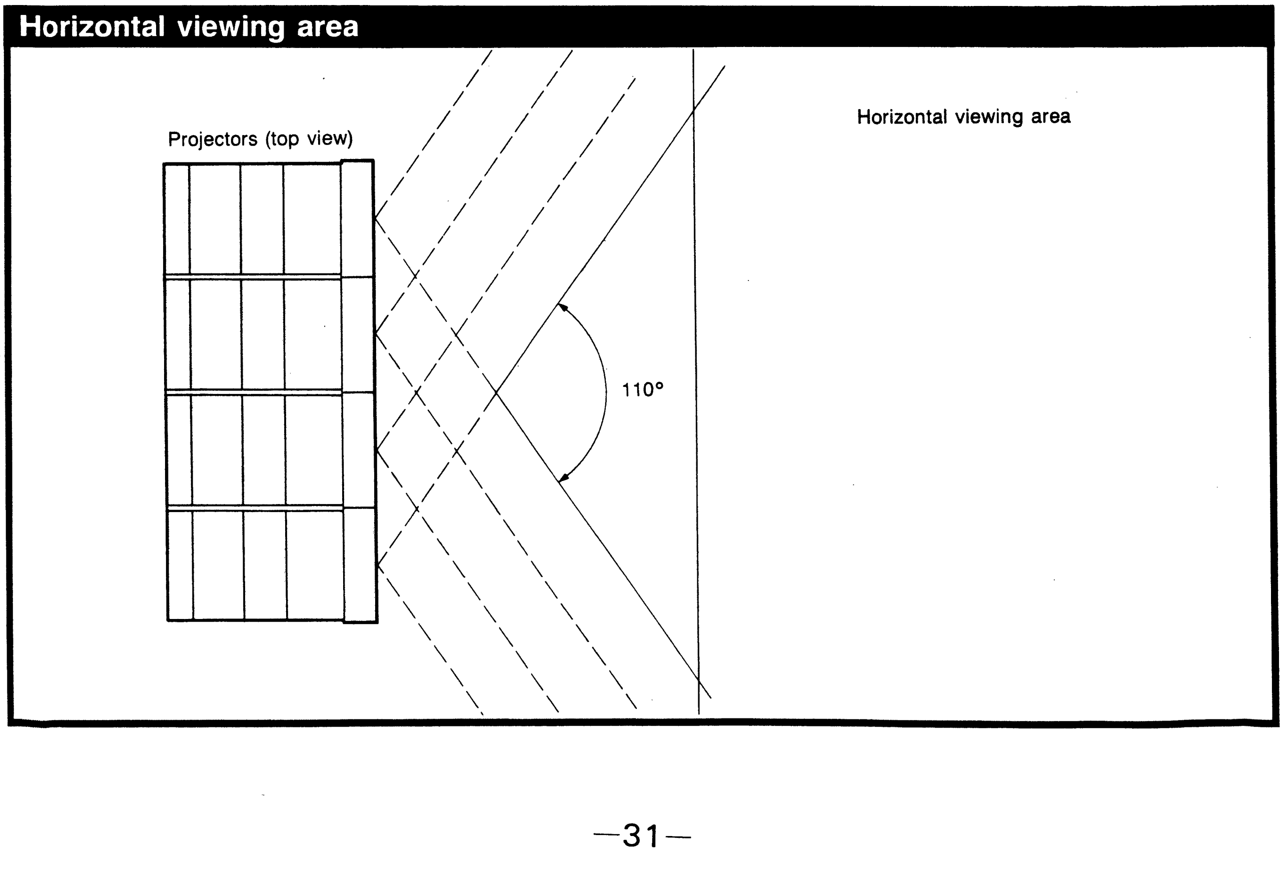
When Using 2 or More Units

Example: When 16 projectors (4 × 4 screens) are installed one meter (3′3″) off the floor.

Vertical viewing area

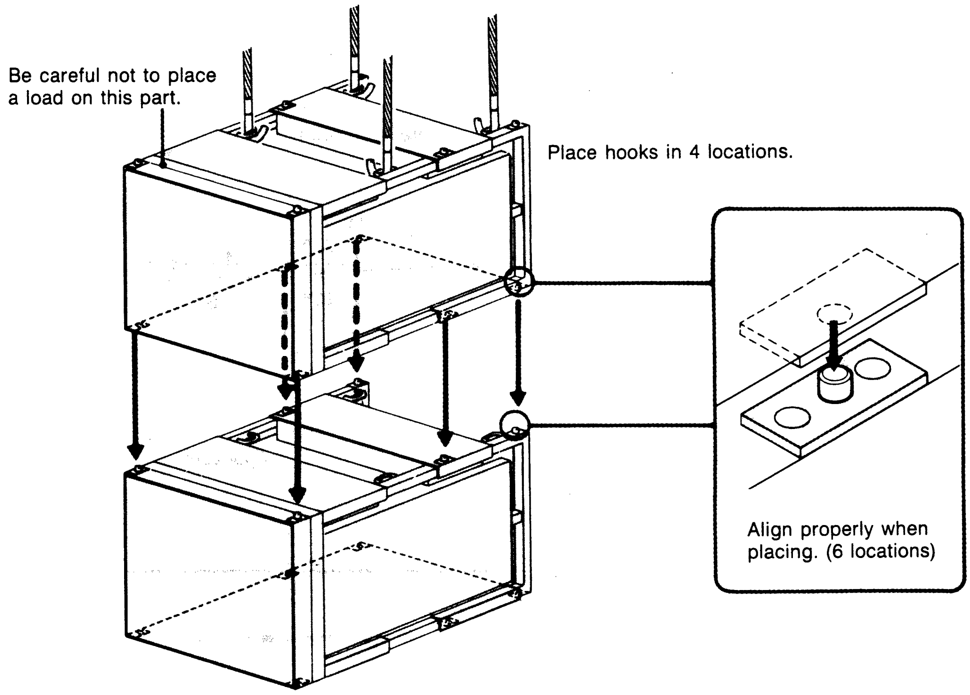

Projectors
Vertical viewing area
22°
22°
3°
2.1 m
(6′9″)
Horizontal line
1 m (3′3″)
Stand
Floor
2.3 m (7′7″)

Horizontal viewing area


Projectors (top view)
Horizontal viewing area
110°

1-8. STACKING THE PROJECTORS

Use a fork lift.
Do not stack more than 4 projectors high.

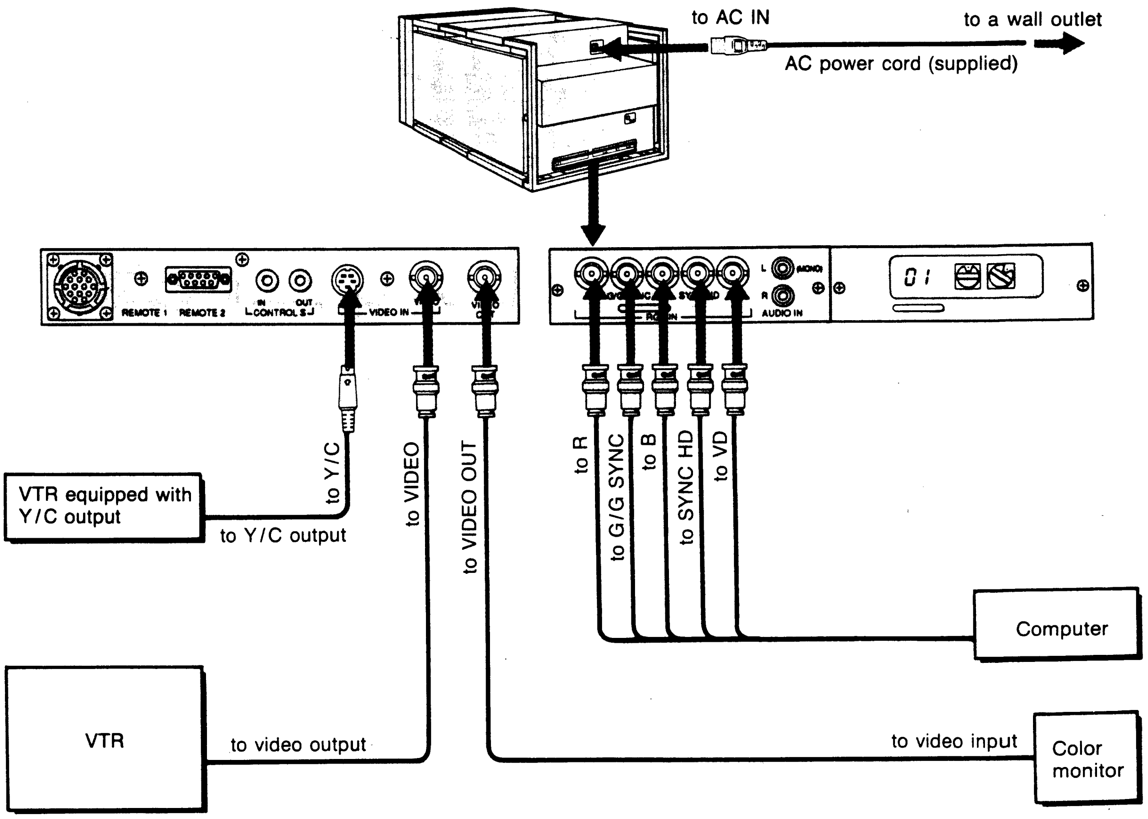

Be careful not to place a load on this part.
Place hooks in 4 locations.
Align properly when placing. (6 locations)

1-9. SYSTEM CONNECTIONS

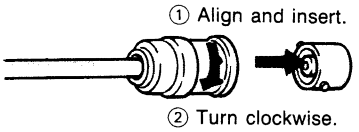
Notes on connections

- First make sure that the power to each piece of equipment is turned off.
- Use the connecting cables suitable for the equipment to be connected.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- To disconnect the cable, pull it out by grasping the plug. Never pull the cable itself.
- For connection of the REMOTE 1 connector, the connecting cable between the projector and the switcher may be extended to a maximum of 50 m for VIDEO input and 25 m for RGB input. If the connecting cable is longer than that, picture quality may be impaired somewhat.
- For connection to the RGB input, use a connecting cable 3C or thicker.
- Read the instruction manual of the equipment to be connected.

Connection When Using One Projector


to AC IN
to a wall outlet
AC power cord (supplied)
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
VIDEO IN
AUDIO IN
L
R
MONO
VTR equipped with Y/C output
to Y/C output
to Y/C
to VIDEO
to VIDEO OUT
to R
to G/G SYNC
to B
to SYNC HD
to VD
Computer
VTR
to video output
to video input
Color monitor

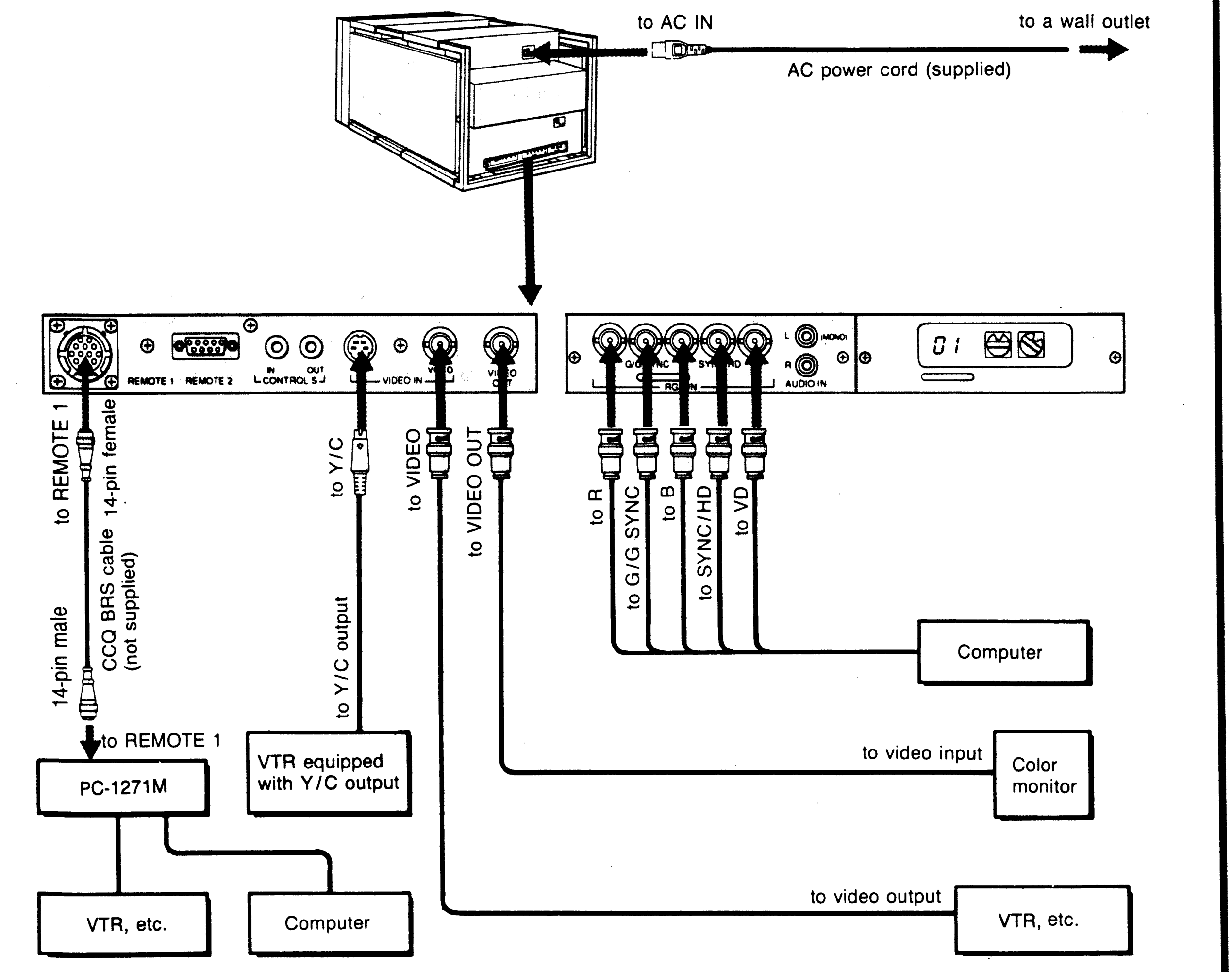
How to connect a BNC connector


① Align and insert.
② Turn clockwise.

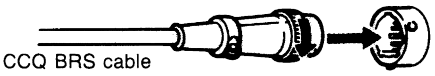
Notes

- The VIDEO connector is disconnected automatically when a cable is connected to the Y/C connector.
- The external sync signal has priority over the internal sync signal. However, if the external sync signal is incomplete, the internal sync signal has priority.

Connection When Using the Switcher


to AC IN
to a wall outlet
AC power cord (supplied)
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
VIDEO IN
VIDEO OUT
RGB IN
AUDIO IN
to REMOTE 1
14-pin female
CCQ BRS cable
(not supplied)
14-pin male
to REMOTE 1
PC-1271M
VTR, etc.
Computer
to Y/C
to Y/C output
VTR equipped with Y/C output
to VIDEO
to VIDEO OUT
to R
to G/G SYNC
to B
to SYNC/HD
to VD
Computer
to video input
Color monitor
to video output
VTR, etc.

How to connect a 14-pin connector


① Align the pins and insert.
CCQ BRS cable
② Turn clockwise.

Note

The equipment can be connected to the VIDEO IN and RGB IN connectors even when the switcher is connected.

To select the input

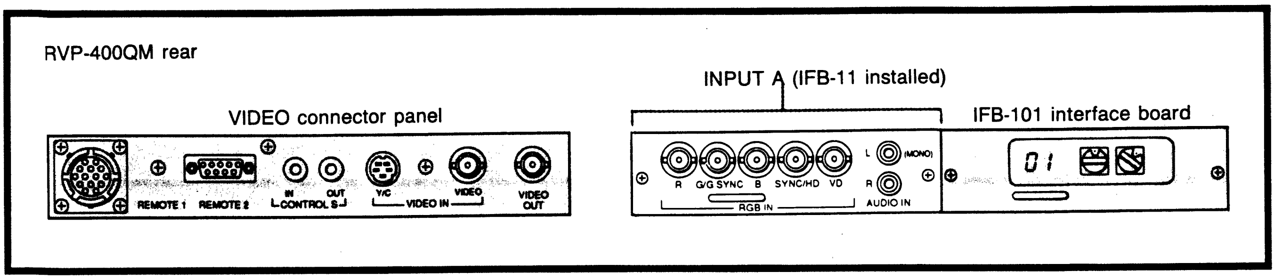
Use the SWITCHER/INDEX keys on the Remote Commander.

First, set the SWITCHER/INDEX select switch to SWITCHER. Press the number key from 1 to 8 to select the input number of the switcher.

The SECOND key is used when there are two switchers. To control the second switcher (whose SINGLE/SECOND/OTHER switch is set to SECOND), first press SECOND and then the number key.

Using an Optional Interface Board

Instead of the IFB-11 RGB input board installed at the factory, it is possible to install an optional interface board in INPUT A and change the input connectors to match those of your computer.


RVP-400QM rear
VIDEO connector panel
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
Y/C
VIDEO
VIDEO IN
VIDEO OUT
INPUT A (IFB-11 installed)
R
G/G SYNC
B
SYNC/HD
VD
RGB IN
L
(MONO)
R
AUDIO IN
IFB-101 interface board
01

Replacing the INPUT A interface board

1 Loosen two screws on the INPUT A panel and pull the board out towards you. (The screws will not come completely out and fall.)
2 Insert the new interface board and tighten the screws.

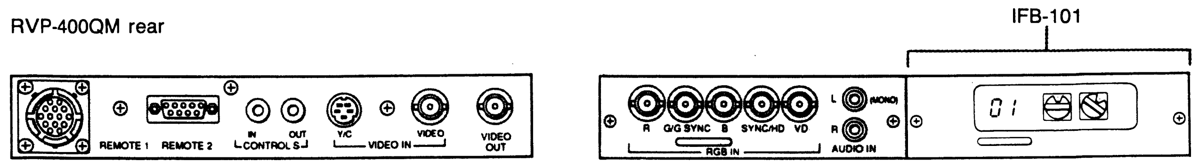
Optional interface board

- IFB-11 (installed at the factory)
  Equipped with 5 BNC connectors for analog input
- IFB-20 (optional)
  Equipped with 9-pin D-sub connector for analog input
- IFB-30 (optional)
  Equipped with 9-pin D-sub connector for digital input
- IFB-1000 (optional)
  Equipped with an S video connector for Y/C input and a BNC connector for composite video input
- IFB-1200 (optional)
  Equipped with 3 BNC connectors for component video input

Note
It is also possible to install an optional interface board in INPUT B instead of the IFB-101 interface board.
Perform replacement of the INPUT B interface board in the same way as for INPUT A.

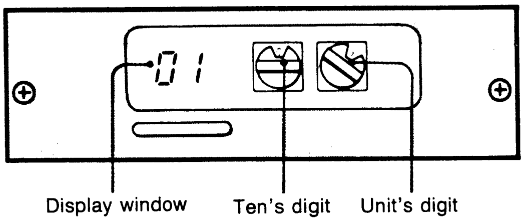
1-10. SETTING THE IFB-101 INTERFACE BOARD

When using two or more projectors connected together, set each projector's index number on the IFB-101. Using this index number, one Remote Commander can adjust each projector and they can be turned on one after the other in the order of the numbers.


RVP-400QM rear
IFB-101
REMOTE 1
REMOTE 2
IN
OUT
CONTROL S
Y/C
VIDEO
VIDEO IN
VIDEO OUT
R
G/G SYNC
B
SYNC/HD
VD
RGB IN
L
(MONO)
R
AUDIO IN
01

Setting the Index Number

Set a number from 00 to 99 on the IFB-101 with the INDEX NO. switches. The established number is displayed in the display window.


01
Display window
Ten's digit
Unit's digit

Example: Set the index numbers in the following order.

16 units (4 x 4 screens)

01	02	03	04
05	06	07	08
09	10	11	12
13	14	15	16

9 units (3 x 3 screens)

01	02	03
04	05	06
07	08	09

4 units (2 x 2 screens)

01	02
03	04

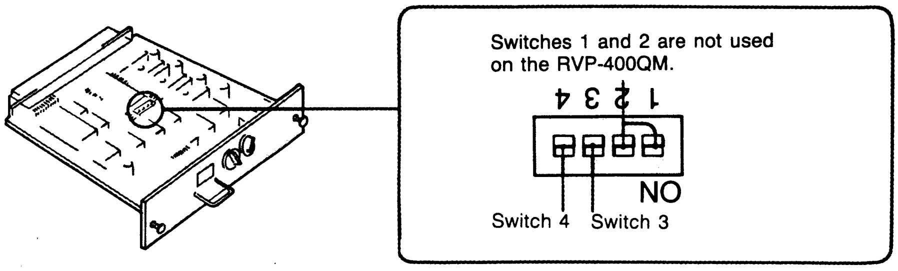
(The illustrations show the front view of the projectors.)

Setting the Method for Turning on the Projectors

By switching switches on the IFB-101, it is possible to turn on the projectors using a circuit breaker or another external power switch, and/or turn on them one after the other with a delay.

1 **Loosen two screws on the IFB-101 interface board panel. Pull the IFB-101 out towards you.**
(The screws will not come completely out and fall.)

2 **Switch switches 3 and 4 on the IFB-101.**



Switch 3

ON	The projectors are turned on one after the other with a delay of 2 seconds each in the order of their index numbers.
OFF	The projectors are turned on at the same time.

Switch 4

ON	With the projectors' MAIN POWER switches set to ON, the projectors are turned on by switching a circuit breaker or another external power switch. When the power is supplied to the projectors, they are turned on by the MAIN POWER switches and the POWER ON key on the Remote Commander.
OFF	With the projectors' MAIN POWER switches set to ON, the projectors are turned on/off with the POWER ON/OFF keys on the Remote Commander. To turn off the projectors, be sure to use the POWER OFF key on the Remote Commander.

3 **Return the IFB-101 to its original position and tighten the screws.**

Notes

- Switches 3 and 4 can be set independently. For example, if you set both switches to ON, the projectors will be turned on one after the other by switching a circuit breaker.
- Be sure to turn off the main power after turning off the power on the Remote Commander. Otherwise, the data will not be saved.

1-11. REMOTE CONTROL OPERATION

All of the adjustments except lens focus can be carried out by using the RM-1271 Remote Commander (not supplied). When using multiple projectors, by setting index numbers, all the projectors can be operated separately or simultaneously with one Remote Commander.

Since the RM-1271 is an infrared type, it can be used without a wire. However, in order to correctly control the projectors, connecting the projector and the Remote Commander with the remote control cable supplied with the Commander is recommended.

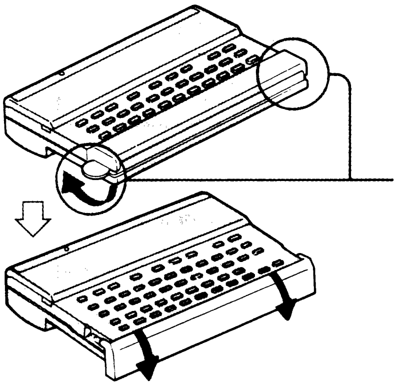
Preparation

1 **Insert three size R6 (AA) batteries with the polarity lined up correctly.**

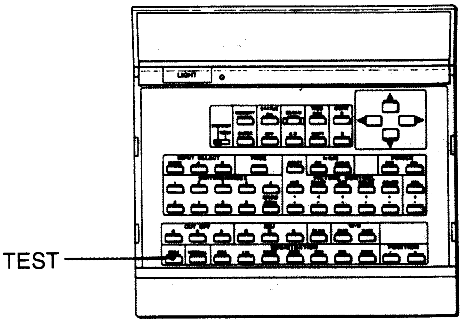
2 **Connect the Commander to the projector.**

3 **Press the MAIN POWER switch on the projector.**

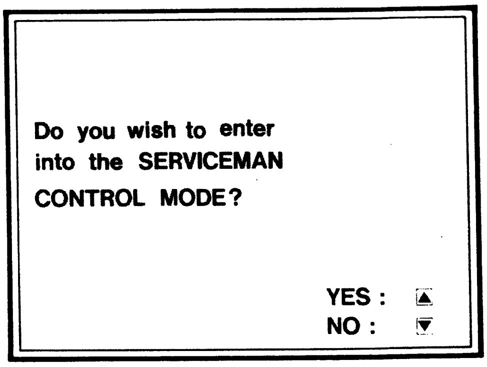
4 **Remove the panel cover of the adjustment keys.**



Open with a coin or a similar.



5 **Keep pressing the TEST key for 5 seconds.**
The display will appear.



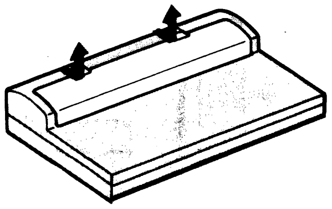
Do you wish to enter into the SERVICEMAN CONTROL MODE?

YES : ▲
NO : ▼

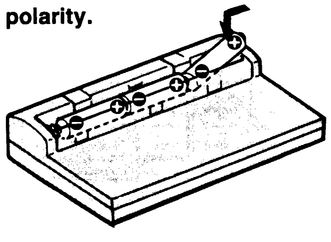
6 **Press the ▲ key.**
The protection on the adjustment keys is cancelled and the adjustment keys will function.
After adjustment, activate the protection again.

Battery installation

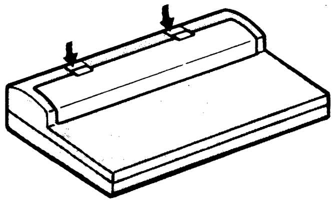
1 **Push to open the lid.**



2 **Install three R6 (AA) batteries with the correct polarity.**



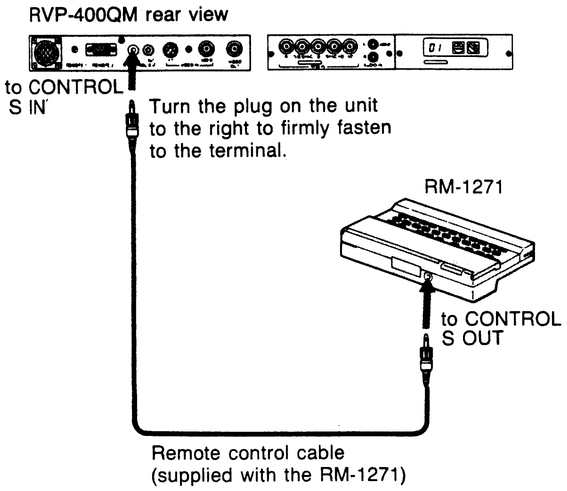
3 **Replace the lid.**



- If the projector does not operate properly, the batteries might be worn out. Replace all three of them with new batteries.
- The life of the batteries depends on frequency of usage and how often you use the LIGHT button. If they wear out quickly, replace them with new alkaline batteries.
- To avoid damage from possible battery leakage, remove the batteries when the Commander will not be used for a long time.
- Be sure that there are no obstructions between the Commander and the projector.
- Operable range is limited. The shorter the distance between the Commander and the projector, the wider the angle within which the Commander can control the projector.

Connecting the Remote Commander to the projector

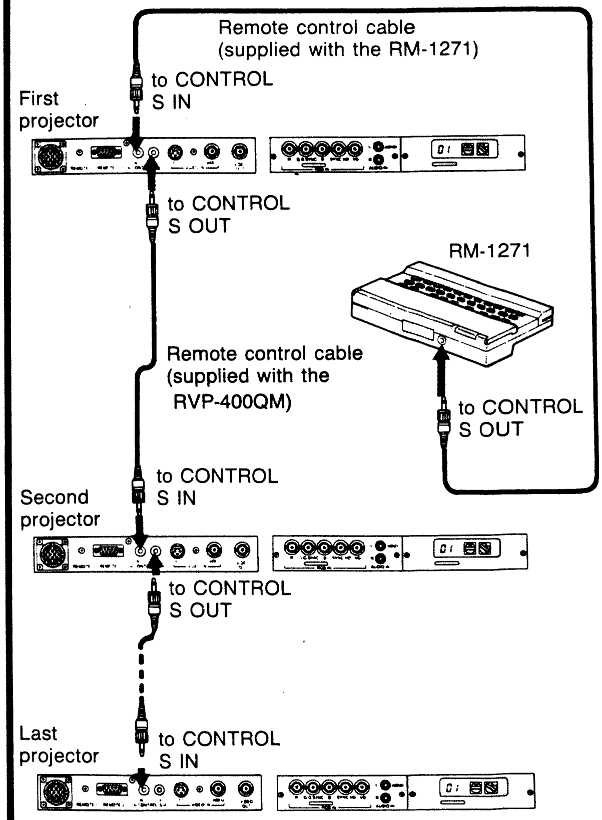
When using one projector


RVP-400QM rear view
to CONTROL S IN
Turn the plug on the unit to the right to firmly fasten to the terminal.
RM-1271
to CONTROL S OUT
Remote control cable (supplied with the RM-1271)

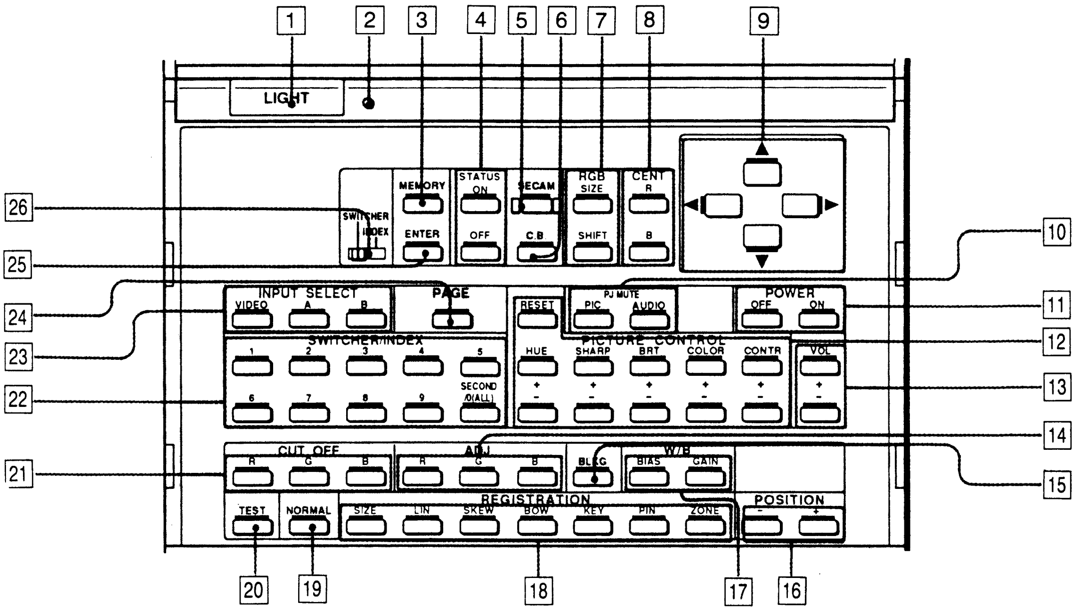
Notes

- You can connect all the projectors in any order if they are connected to each other with the remote control cables as illustrated.
- When the above connection is made, the remote control detector of the projector does not function. For wireless operation, be sure to disconnect both plugs from the projector and the Commander.

When using multiple projectors


Remote control cable (supplied with the RM-1271)
First projector
to CONTROL S IN
to CONTROL S OUT
RM-1271
Remote control cable (supplied with the RVP-400QM)
to CONTROL S OUT
Second projector
to CONTROL S IN
to CONTROL S OUT
Last projector
to CONTROL S IN

Keys on the Commander


1
2
3
4
5
6
7
8
9
LIGHT
MEMORY
ENTER
STATUS
ON
OFF
SECAM
C.B
RGB
SIZE
SHIFT
CENT
R
B
SWITCHER INDEX
INPUT SELECT
VIDEO
A
B
PAGE
RESET
PJ MUTE
PIC
AUDIO
POWER
OFF
ON
SWITCHER/INDEX
1
2
3
4
5
6
7
8
9
SECOND 0(ALL)
PICTURE CONTROL
HUE
SHARP
BRT
COLOR
CONTR
VOL
+
-
CUT OFF
R
G
B
ADJ
R
G
B
BLK G
W/B
BIAS
GAIN
TEST
NORMAL
REGISTRATION
SIZE
LIN
SKEW
BOW
KEY
PIN
ZONE
POSITION
-
+
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

1 LIGHT button

Press to light key indicators.
If the keys are not operated within about 30 seconds the light automatically goes out.

2 Transmission indicator

The light goes on each time a key is pressed. When the indicator does not light, replace the batteries.

3 MEMORY key

Press to store various adjustment data into memory.

4 STATUS ON/OFF key

Press **OFF** to eliminate the "On-Screen display".
Press **ON** to restore the on-screen display.
Note: The PAGE display appears even when the **OFF** key is pressed.

5 SECAM key

When SECAM signal is input to the projector and you cannot get normal color, press this key. Press again to switch over to the other standard system sources, NTSC or PAL.

6 C.B. (clear blue) key

Press to make the blue color clear in RGB mode. Press again to restore the normal condition.

7 RGB SIZE/SHIFT key

Press to adjust the size and shift of the picture for the RGB signal input.

SIZE: Press to enter the size adjustment mode. The size adjustment of the picture is performed using the four arrow keys.
▲ . . . The key to expand the vertical size
▼ . . . The key to reduce the vertical size
◀ . . . The key to expand the horizontal size
▶ . . . The key to reduce the horizontal size

SHIFT: Press to enter the shift adjustment mode. The shift adjustment of the picture is performed using the four arrow keys. The picture shifts according to the direction of the arrow.

8 CENT R/B keys

Press to enter the centering adjustment mode of the red and blue.

CENT R: Press to enter the red centering adjustment mode.

CENT B: Press to enter the blue centering adjustment mode.

Centering adjustments are performed using the four arrow keys.

9 Arrow keys

The keys are used for various adjustment functions.

10 PJ MUTE keys

PIC: Press to cut off the picture. To restore the picture, press it again or CONTR +.

AUDIO: This key does not function with the RVP-400QM.

11 **POWER ON/OFF keys**

Press to turn on and off the projector.

Notes

- When the power is turned off with the Commander, all the data is saved and when the power is turned on again, the data will be recovered.
- Turn off the main power on the projector after turning off the power on the Commander. Otherwise the data will not be saved.

12 **PICTURE CONTROL keys**

Press to adjust picture condition: hue, sharpness, brightness, color, and contrast. Press RESET to restore the standard levels.

13 **VOL (volume) +/− keys**

These keys do not function with the RVP-400QM.

14 **ADJ R/G/B (adjust red/green/blue) keys**

Press to select color to be adjusted when adjusting the registration.

R... Red signal
G... Green signal (Servicing only. If you change the green signal setting, perform the factory reset operation.)
B... Blue signal

15 **BLKG (blanking) key**

Press to enter the blanking adjustment mode. The blanking period can be adjusted using the four arrow keys.

16 **POSITION +/− keys**

Used for zone adjustment and the blanking adjustment.

17 **W/B (white balance) key**

Press to enter the white balance adjustment mode.

BIAS: For cut off adjustment
GAIN: For drive adjustment

18 **Registration keys SIZE/LIN/SKEW/BOW/KEY/PIN/ZONE**

Press to select the desired item for registration adjustment. The registration adjustment is performed using the four arrow keys, ADJ keys and POSITION +/− keys. For details, see "Registration Adjustment."

19 **NORMAL key**

Press to cancel the test patterns or serviceman control mode.

20 **TEST key**

Press to display the internal test patterns.

Each press of this button displays 8 patterns sequentially. In registration and white balance adjustment mode, appropriate patterns will be displayed for each adjustment.

21 **CUT OFF keys**

Press to select the color to be turned off when adjusting the registration. Press again to turn on the color.

R... Red signal
G... Green signal
B... Blue signal

22 **SWITCHER/INDEX keys**

When the SWITCHER/INDEX select switch is set to SWITCHER

When the PC-1271M switcher is connected, select the input from the switcher. The SECOND key is used when two switchers are connected. To select the input from the second switcher (when the switcher's SINGLE/SECOND/OTHER switch is set to SECOND), press the number keys after pressing SECOND. Number key 9 does not operate.

When the SWITCHER/INDEX select switch is set to INDEX

When multiple projectors are connected, select the index number of the projector to be adjusted. To select, press the ENTER key after pressing the number keys. When adjusting all of the projectors simultaneously, press the ENTER key after pressing 0 (ALL).

23 **INPUT SELECT keys**

Press to select the input signal.

VIDEO: to select the signal input from the VIDEO IN (Y/C or VIDEO) connectors
A: to select the signal input from the RGB IN connectors
B: to select the signal input from the connectors of INPUT B if an optional interface board is installed (This key does not function if the IFB-101 is installed.)

24 **PAGE key**

Press to display and switch the following four on-screen displays. (On PAGE 1, 2, and 3, adjustment can also be done.)

PAGE 1: Displays STATUS ON/OFF, PIC MUTE ON/OFF, CLEAR BLUE ON/OFF, and SECAM ON/OFF.
PAGE 2: Displays the picture conditions; contrast, color, brightness, sharpness and hue.
PAGE 3: Displays the color temperature level and clamp setting.
PAGE 4: Displays the input signal conditions; f_H, f_v, H/C-sync, V-sync, Sync on Green, and input signal.

25 **ENTER key**

In the case of a projection wall, when selecting a projector to be adjusted, press this key after pressing the SWITCHER/INDEX key. And, press this key when you want to display the index number of each projector on its screen.

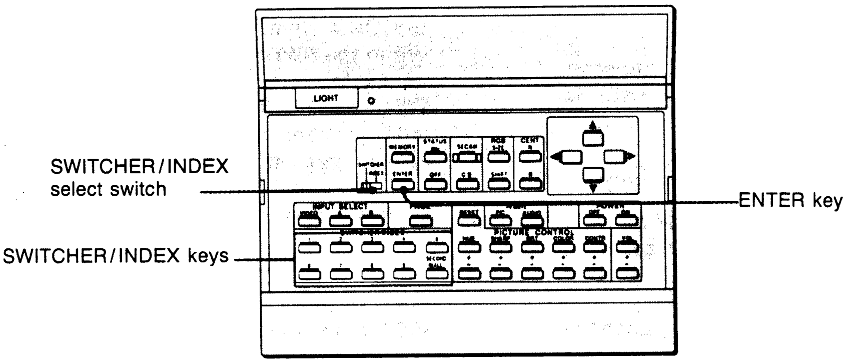
26 **SWITCHER/INDEX select switch**

Selects the SWITCHER/INDEX key functions.

When using as the switcher input selector, set to SWITCHER. In the case of a projection wall, when selecting the index number of a projector to be adjusted, set to INDEX.

Selecting a Projector to be Adjusted

Using the SWITCHER/INDEX and ENTER keys, select the number corresponding to the index number set on the IFB-101 interface board of each projector.



1 **Set the SWITCHER/INDEX select switch to INDEX.**

2 **Press the desired SWITCHER/INDEX keys and then ENTER.**

Example: To adjust projector 01: 1 → ENTER
To adjust projector 11: 1 → 1 → ENTER
To adjust all the projectors: 0/ALL → ENTER
To adjust projector 00: 0/ALL → 0/ALL → ENTER

The index number blinks on the screen for 3 seconds indicating that the projector can be adjusted.

- When the power of the system is turned on, all the projectors can be adjusted at the same time. The index numbers of all the projectors blink.
- To display the index numbers on the screen, press the ENTER key only. The index numbers of all the projectors will appear on their screens. At this time the number of the projector that can be adjusted will blink.

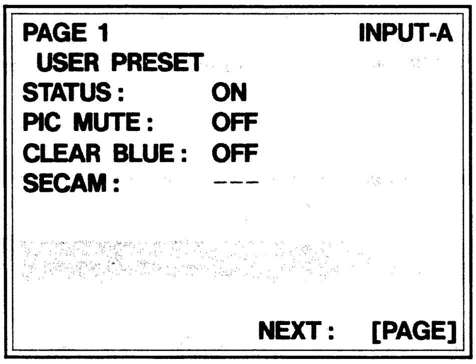
1-12. ADJUSTMENT DISPLAYS AND TEST PATTERNS

PAGE Displays

Press the PAGE key to display the following four on-screen displays. Adjustment can also be done on PAGE 1, 2, and 3.
The displays will switch as follows every time the PAGE key is pressed:

PAGE 1 → PAGE 2 → PAGE 3 → PAGE 4
↑——— Original screen ←———┘

PAGE 1

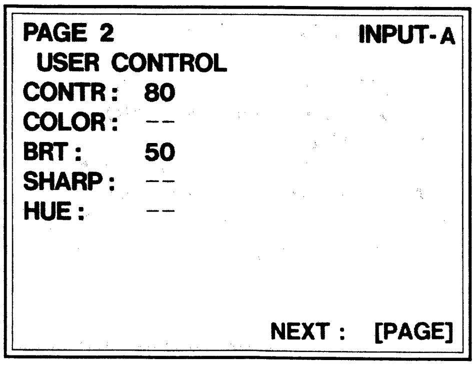


```
PAGE 1                    INPUT-A
 USER PRESET
STATUS :        ON
PIC MUTE :      OFF
CLEAR BLUE :    OFF
SECAM :         ---


                NEXT :    [PAGE]
```

The STATUS ON/OFF, PIC MUTE ON/OFF, CLEAR BLUE (C.B.) ON/OFF, and SECAM ON/OFF settings are displayed. "---" indicates that the control does not function with the current input signal.
To change the settings, adjust with appropriate keys.

PAGE 2

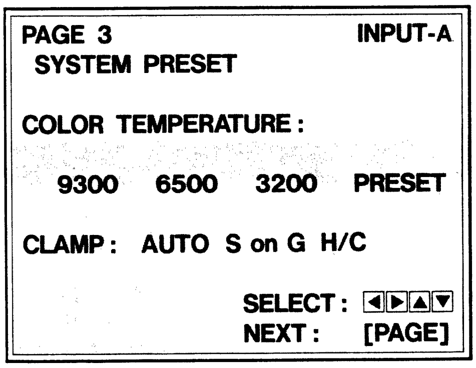


```
PAGE 2                    INPUT-A
 USER CONTROL
CONTR :  80
COLOR :  --
BRT :    50
SHARP :  --
HUE :    --


                NEXT :    [PAGE]
```

The picture conditions; contrast, color, brightness, sharpness and hue are displayed. "--" indicates that the control does not function with the current input signal. (In this case, the input signal is RGB.)
To change the levels, adjust with the PICTURE CONTROL keys.

PAGE 3



PAGE 3 INPUT-A
SYSTEM PRESET

COLOR TEMPERATURE:

9300 6500 3200 PRESET

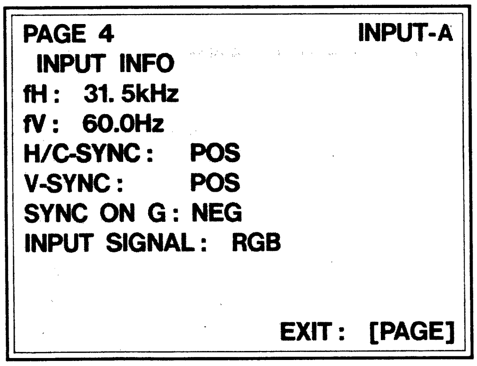
CLAMP: AUTO S on G H/C

SELECT: ◀▶▲▼
NEXT: [PAGE]

The color temperature and clamp settings are displayed.
The selected item blinks in green.
To change the setting, adjust by pressing ◀, ▶, ▲, and ▼ keys.
The selected color temperature setting can be saved by pressing the MEMORY key.
For details of the clamp setting, see "If the luminance of the picture is incorrect — clamp setting".

Note
"CLAMP" is not displayed when the input mode is VIDEO.

PAGE 4



PAGE 4 INPUT-A
INPUT INFO
fH: 31.5kHz
fV: 60.0Hz
H/C-SYNC: POS
V-SYNC: POS
SYNC ON G: NEG
INPUT SIGNAL: RGB

EXIT: [PAGE]

The signal input conditions are displayed.
f_H: The horizontal frequency of the input signal
f_V: The vertical frequency of the input signal
H/C-SYNC: The polarity of the H/C-SYNC
V-SYNC: The polarity of the V-SYNC
SYNC ON G: The polarity of the SYNC on the Green

POS: positive
NEG: negative
– – –: no input

When POS (NEG) is displayed in green:
The picture is being projected using its sync signal.
When POS (NEG) is displayed in white:
The picture is being projected without using its sync signal.

INPUT SIGNAL: The current input signal.
Y/C: S video input signal from VIDEO IN
RGB: RGB input signal
NTSC: NTSC input signal from VIDEO IN
PAL: PAL input signal from VIDEO IN
SECAM: SECAM input signal from VIDEO IN
B & W: Black and white input signal from VIDEO IN

Messages on the screen

Color of message

Four colors are used in the screen display.

Color	Meaning
Green	Function and condition, item being selected on PAGE display
Cyan	Operation guide and messages
Yellow	Caution and error messages
White	Item being adjusted, item not being selected on PAGE display

Error message

When an error occurs, the following messages will be displayed.

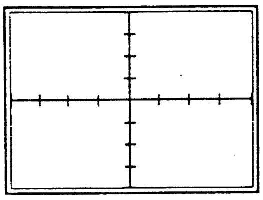
Message	Meaning
Not applicable!	The control does not function with the current input.
PIC MUTE	PIC MUTE is set to ON. If you want to adjust the picture controls, press PJ MUTE PIC key to cancel the PIC MUTE mode.
Overflow!	Adjustable range had reached its limit.
NO INPUT	No signal is input in the selected input mode.
OFF	STATUS is set to OFF to clear the on-screen display. To restore the on-screen display, press STATUS ON.

Test Patterns

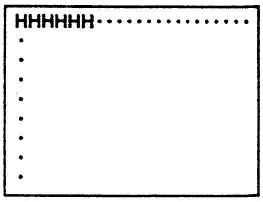
In each adjustment mode, an appropriate test pattern will be displayed. In addition, other test patterns can be displayed by pressing the TEST key.

All the test patterns

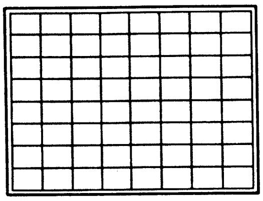
Cross hair



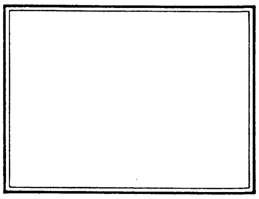
H



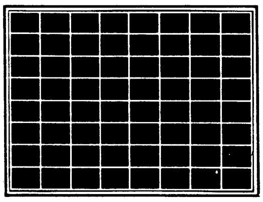
Hatch (9 × 9)



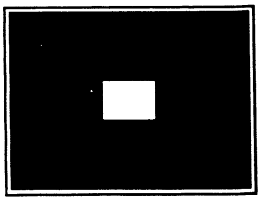
White



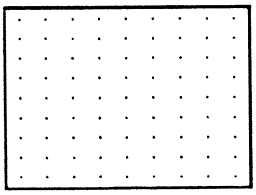
Hatch (reverse)



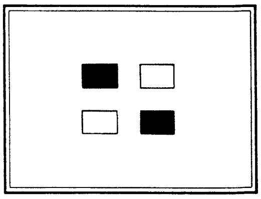
Window



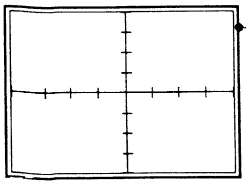
Dot



PLUGE*



*PLUGE = Picture Line Up Generating Equipment



The outside bold line stands for the edge of the screen.

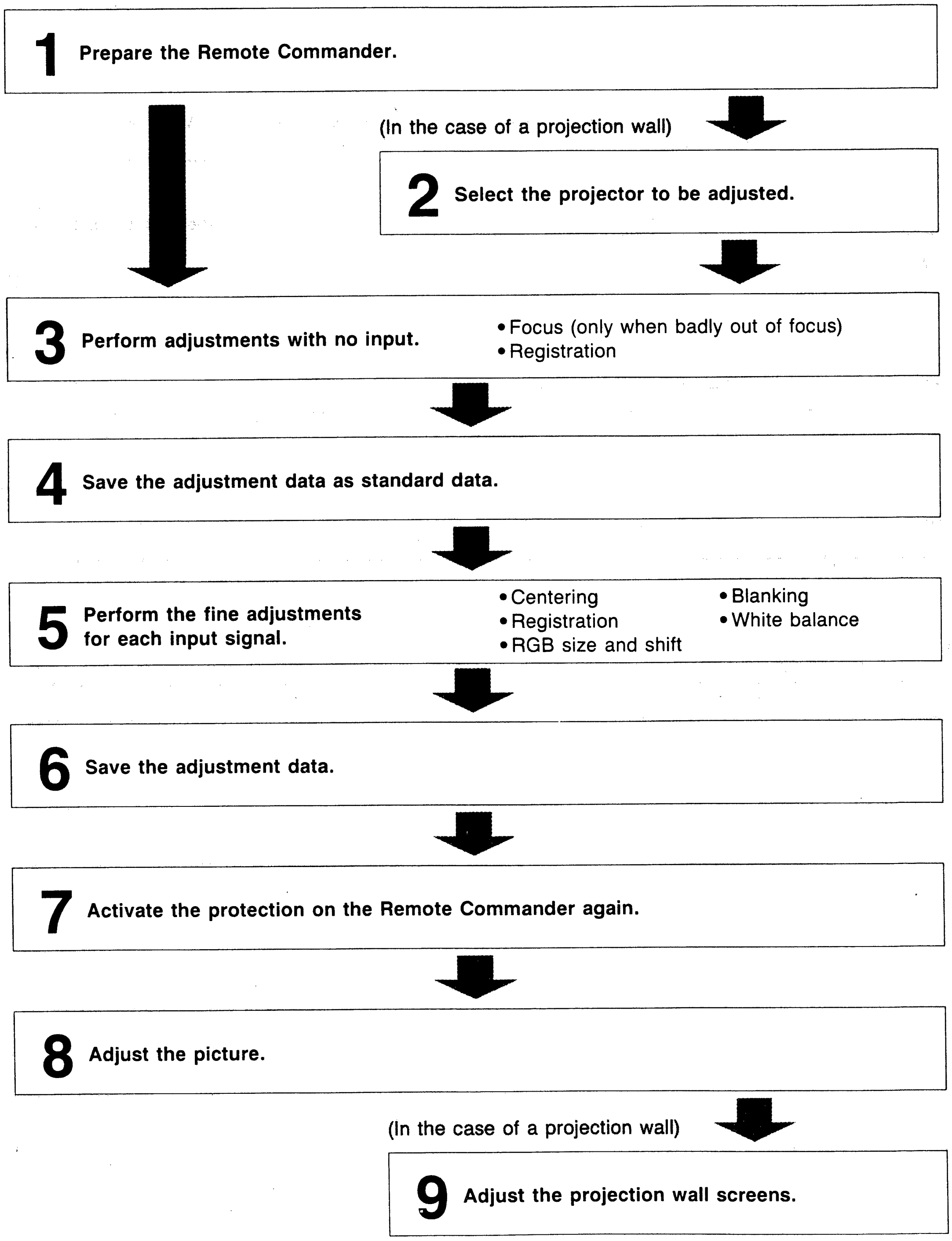
Test Patterns in Each Mode

Mode		With one press of TEST key, test patterns change as follows.	
Normal		Cross hair → Hatch (9 × 9) → Hatch reverse → Dot → H → White → Window → PLUGE → Cross hair	
Registration	SIZE LIN SKEW BOW	Cross hair ↔ Hatch (9 × 9)	Select the desired one.
	KEY PIN	Hatch (5 × 5) ↔ Hatch (9 × 9)	Select the desired one.
	ZONE	Hatch (9 × 9) + Cursor	
White balance	BIAS	PLUGE	
	GAIN	Window ↔ White	
BLKG		Hatch (9 × 9)	
CENT RGB		Cross hair ↔ Hatch (5 × 5)	Select the desired one.

1-13. ADJUSTMENT PROCEDURES

Perform each adjustment with the Remote Commander (not supplied), first with no input source connected.
After the adjustment, save the data.
Next, perform the fine adjustments for each input signal.

Follow the steps below.



1 Prepare the Remote Commander.

(In the case of a projection wall)

2 Select the projector to be adjusted.

3 Perform adjustments with no input.
- Focus (only when badly out of focus)
- Registration

4 Save the adjustment data as standard data.

5 Perform the fine adjustments for each input signal.
- Centering
- Registration
- RGB size and shift
- Blanking
- White balance

6 Save the adjustment data.

7 Activate the protection on the Remote Commander again.

8 Adjust the picture.

(In the case of a projection wall)

9 Adjust the projection wall screens.

1-14. LENS FOCUS ADJUSTMENT

Since the projector is focused at the factory, usually focusing is not necessary. Adjust the lens focus only when it is very out of focus. If sharp focus cannot be obtained with the lens focus adjustment, perform the electric focus adjustment.

Procedure

1 **Remove the covers.**

↓

2 **Set the Remote Commander to the serviceman adjustment mode by removing the panel cover on the adjustment keys.**

↓

3 **Select the RGB input with no input source connected.**
(NO INPUT mode)

↓

4 **Display the H-pattern.**

↓

5 **Set both CONTR (contrast) and BRT (brightness) levels to 50.**

↓

6 **Adjust the green focus.**

↓

7 **Adjust the red focus.**

↓

8 **Adjust the blue focus.**

↓

9 **Adjust the electric focus.**
(Only when not in focus with the lens focus adjustment)

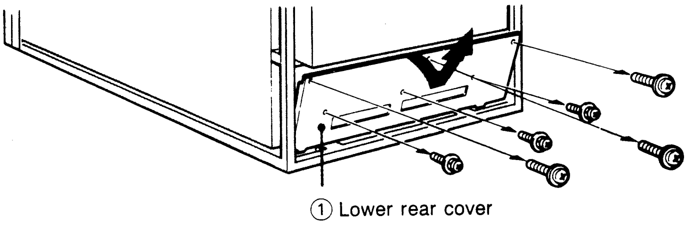
↓

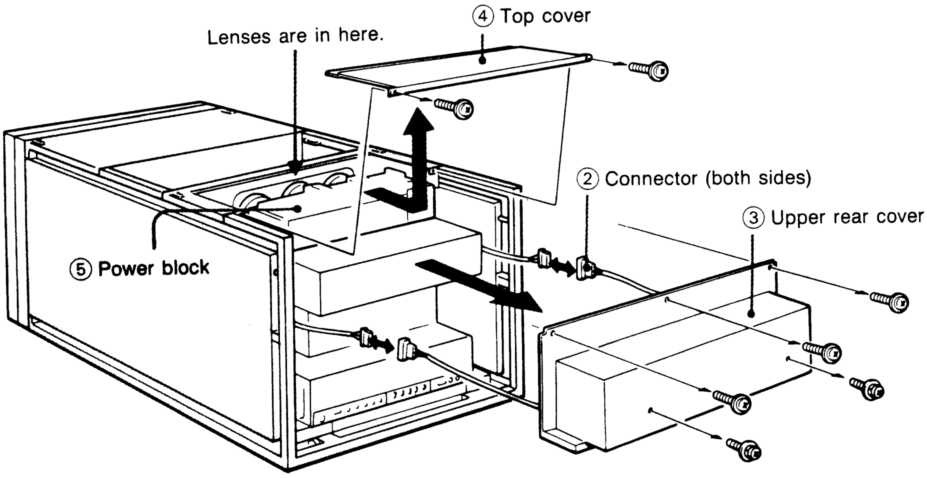
Proceed to the registration adjustment.

Adjustment

1 Remove the covers.

① Remove 6 screws and the lower rear cover.
② Disconnect 2 connectors.
③ Remove 5 screws and the upper rear cover.
④ Remove 2 screws and the top cover.
⑤ If the projectors are stacked, lower the power block.

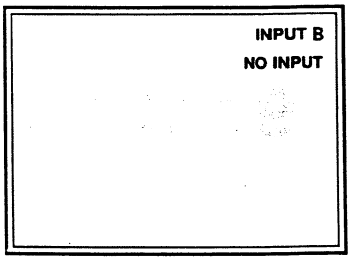

① Lower rear cover


④ Top cover
Lenses are in here.
② Connector (both sides)
③ Upper rear cover
⑤ Power block

2 Make the adjustment keys on the Remote Commander operable.

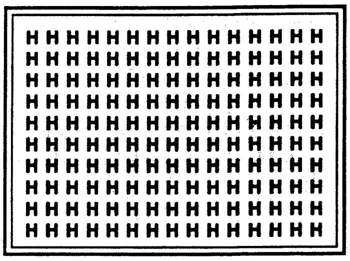
3 Select the RGB input with no input source connected. (NO INPUT mode)

Press the INPUT SELECT B key on the Remote Commander. Or, set the SWITCHER/INDEX select switch to SWITCHER and then from among the number keys from 1 to 8, press a key with no input source connected.
Make sure that "NO INPUT" is displayed on the screen.


INPUT B
NO INPUT

Note
Do not press INPUT SELECT VIDEO key.

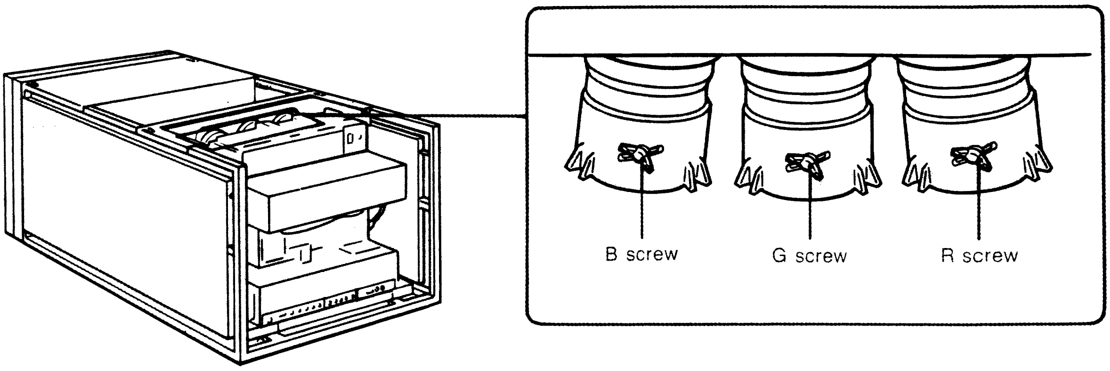
4 **Press the TEST key on the Commander five times.**
An H-pattern will appear.



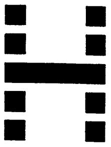
5 **Press PICTURE CONTROL CONTR and BRT keys to set their adjustment levels to 50.**

6 **Adjust the green focus.**

① Press the CUT OFF R and B keys to display the green signal only.
② Loosen the G screw and slide it so that the letter H at the center of the screen is in optimum focus.
③ Tighten the screw.



Lens focus adjustment hint
The letter H is made up of dots. If it is in focus, the dots will be clearly seen as in the illustration. (Only for green and red)



7 Adjust the red focus.

① Press the CUT OFF G and B keys to display the red signal only.
② Adjust the red focus using the R screw following the same procedure as for the green focus.

8 Adjust the blue focus.

① Press the CUT OFF G and R keys to display the blue signal only.
② Adjust the blue focus using the B screw following the same procedure as for the green focus.

The lens focus adjustment is complete.
Proceed to the registration adjustment.

Note
When you cannot see the letter H clearly as seen in step 6 with the green and red focus adjustments, perform the electric focus adjustment.

Electric Focus Adjustment

When you cannot obtain sharp focus with the lens focus adjustment, perform the green and red electric focus adjustments using the controls at the rear of the projector.

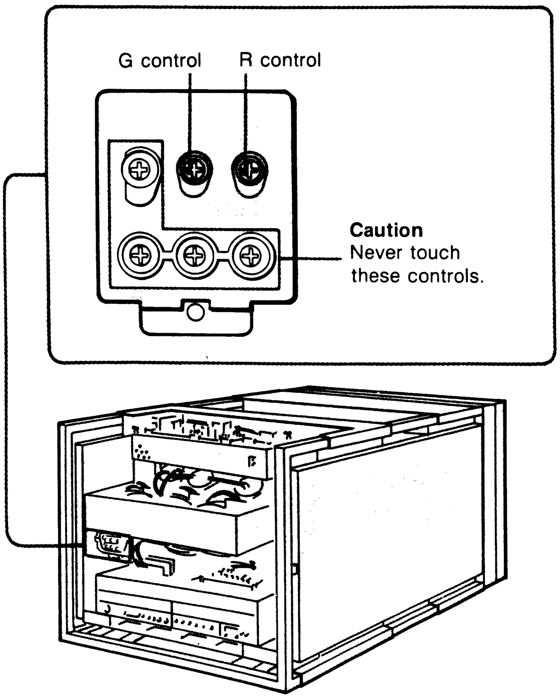
1 **Remove the lower and upper rear covers.**

2 **Press the TEST key five times to display the H-pattern.**

3 **Press the PICTURE CONTROL RESET key to reset the CONTR level to 80 and the BRT level to 50.**

4 **Adjust the green electric focus.**

① Press the CUT OFF R and B keys to display the green signal only.
② Adjust focus by turning the G control.



Caution
Never touch these controls.

5 **Adjust the red electric focus.**

① Press the CUT OFF G and B keys to display the red signal only.
② Adjust focus by turning the R control.

Hint 1
Since the focus adjustment level varies with brightness of the screen, set PIC CONTROL to the factory preset levels.

Hint 2
In the case of a high-resolution picture, when it is projected and the adjustment is made, even better focusing is possible. In this case, also, set PIC CONTROL to the factory preset levels.

Blue electric focus adjustment
If the blue color is in focus, the brightness of the picture will be reduced, so that it is a little out of focus at the factory. If it is in focus, readjustment of the white balance will be necessary after the electric focus adjustment.
When a customer wants the blue in focus, try to press the C.B. key before adjusting the electric focus. The blue color of a picture input from the RGB IN connectors will be clear. Although color reproduction will be somewhat impaired, pressing the C.B. key is recommended instead of adjusting the electric focus.

1-15. REGISTRATION ADJUSTMENT

Display the test pattern on the screen and adjust the registration.
Perform green, red and blue adjustments in this order to converge the three colors.

Procedure

1 **Mark the center of the screen.**

2 **Set the Remote Commander to the serviceman adjustment mode.**

3 **Select the RGB input with no signal connected.**
(NO INPUT mode)

4 **Reset the data to the factory preset level.**
(Only when the adjustment data has been saved before)

5 **Release blanking adjustment.**

6 **Adjust the green registration.**

① Centering adjustment
② SIZE and LIN adjustments
③ SKEW and BOW adjustments
④ KEY and PIN adjustments

7 **Adjust the red registration.**

① Centering adjustment
② SIZE and LIN adjustments
③ SKEW and BOW adjustments
④ KEY and PIN adjustments
⑤ ZONE adjustment

8 **Adjust the blue registration.**

① Centering adjustment
② SIZE and LIN adjustments
③ SKEW and BOW adjustments
④ KEY and PIN adjustments
⑤ ZONE adjustment

↓

9 **Adjust blanking.**

↓

10 **Save the adjusted data as standard data.**

↓

11 **Perform fine adjustments for each input signal**

① Adjustment of video input signal
② Adjustment of RGB input signal
③ White balance adjustment

↓

12 **Activate the protection on the Remote Commander.**

↓

13 **Adjust the picture.**

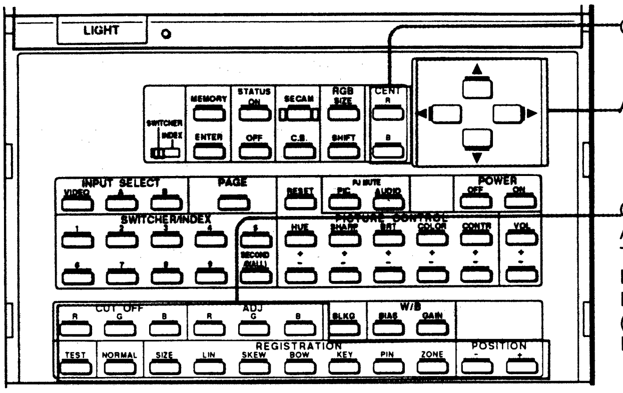
↓

14 **Adjust the projection wall screens.**

↓

Complete.

Keys for Registration Adjustment


LIGHT
MEMORY
STATUS
ON
SECAM
RGB
SIZE
CENT
R
SWITCHER
INDEX
ENTER
OFF
C.S.
SHIFT
B
INPUT SELECT
VIDEO
A
B
PAGE
RESET
PJ MUTE
PIC
AUDIO
POWER
OFF
ON
SWITCHER/INDEX
1
2
3
4
5
6
7
8
9
PICTURE CONTROL
HUE
SHARP
BRT
COLOR
CONTR
VOL
CUT OFF
R
G
B
ADJ
R
G
B
BLKG
W/B
BIAS
GAIN
REGISTRATION
TEST
NORMAL
SIZE
LIN
SKEW
BOW
KEY
PIN
ZONE
POSITION
-
+

CENT (centering) key

Arrow keys

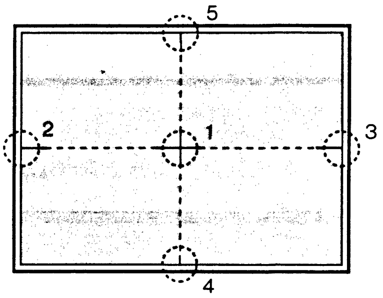
CUT OFF R/G/B keys
ADJ R/G/B (Adjust red/green/blue) keys
TEST key
NORMAL key
REGISTRATION keys
(SIZE/LIN/SKEW/BOW/KEY/PIN/ZONE)
POSITION keys

Identifying the REGISTRATION keys

Indications on the Commander	Adjustment items
CENT	centering
SIZE	size
LIN	linearity
SKEW	skew
BOW	bow
KEY	keystone
PIN	pincushion
ZONE	zone

Preparation

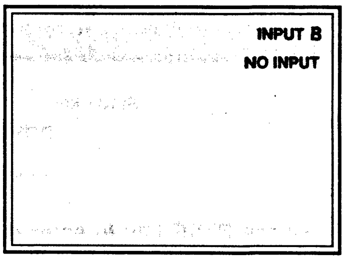
1 **Mark the center of the screen.**
Measure the length and width of the screen to decide the center.
Marking five points as illustrated with white tape will help you adjust registration.



2 **Set the Remote Commander to the serviceman adjustment mode.**

3 **Select the RGB input with no input source connected. (NO INPUT mode)**
Press the INPUT SELECT B key on the Remote Commander. Or, set the SWITCHER/INDEX select switch to SWITCHER and then from among the number keys from 1 to 8, press a key with no input source connected.
Make sure "NO INPUT" is displayed on the screen.

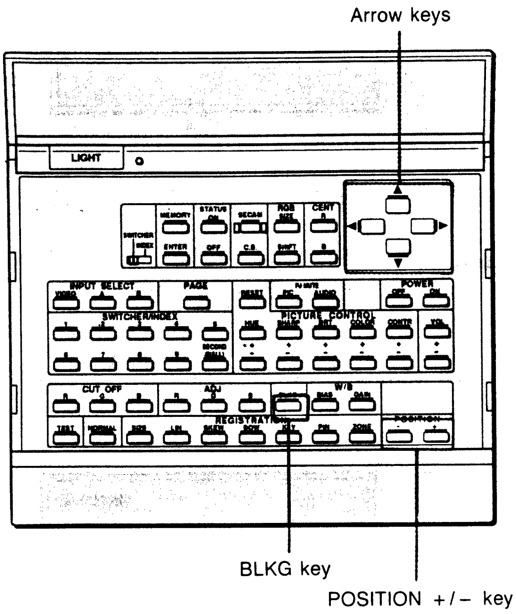
Note
Do not press the INPUT SELECT VIDEO key.



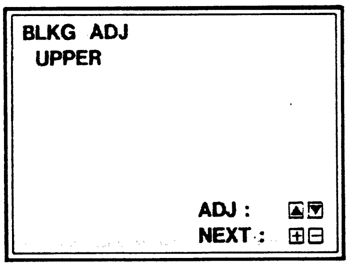
4 **Reset the standard data.**
(Only when the registration adjustment has been performed and the data has been saved before).

Releasing Blanking Adjustment

The registration adjustment is difficult if the entire test pattern is not visible. Follow the steps below to make the whole test pattern visible.



1 **Press the BLKG key to enter the blanking adjustment mode.**



BLKG ADJ
UPPER

ADJ : ▲▼
NEXT : ⊞⊟

2 **Press the TEST key once.**
The hatch pattern is displayed.

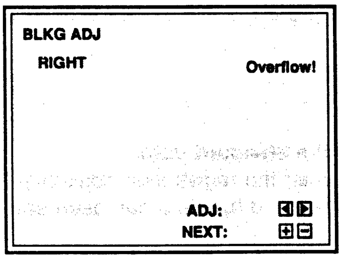
3 **Press the POSITION +/- keys to select the part to be adjusted.**
When the + key is pressed, the position will change as follows:

UPPER → LOWER → LEFT → RIGHT

When the - key is pressed, the position will change in the reverse of the above order.

4 **Press the arrow keys until "Overflow!" is displayed on the screen for each position.**

▲: UPPER, ▼: LOWER, ◀: LEFT, ▶: RIGHT



BLKG ADJ
RIGHT Overflow!

ADJ: ◀▶
NEXT: ⊞⊟

Note
There may be a rainbow-like vertical band on the right side or a diagonal line on the upper part of the screen. As they can be adjusted with the blanking adjustment later, leave them alone for now.

Green Registration Adjustment

Be sure to adjust starting with the green test pattern.
When adjusting green, do not perform the ZONE adjustment as far as possible. If the green ZONE adjustment is great, the adjustment of red and blue will be difficult.

1 Green centering adjustment

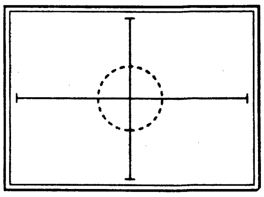
Adjust so that the center of the test pattern is aligned with the center of the screen.

1 **Press the ZONE key.**
The hatch pattern and the cursor are displayed.
If the cursor is not centered, press the POSITION key to move it to the center of the screen.

2 **Press the ADJ G key.**

3 **Press the CUT OFF R and B keys to display green only.**

4 **Press the arrow keys to align the center of the hatch pattern with the center of the screen.**



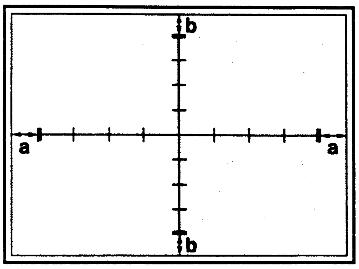
Note
At this time perform the ZONE adjustment only for the center zone.

2 Green SIZE and LIN (linearity) adjustment

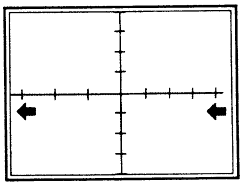
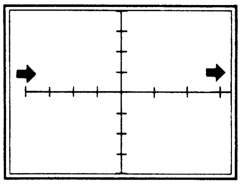
Adjust the size of the displayed picture with respect to the screen, and the picture's up, down, left and right balance.

1 **Press the LIN key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Press the ADJ G key.**
Pay attention only to the bold lines (the ends of the vertical and horizontal lines).

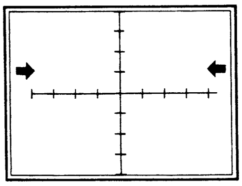
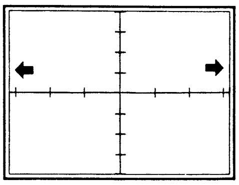


3 **Adjust with the ◀ and ▶ keys until parts (a) on the right and left are of equal length.**

◀	The right and left vertical lines are shifted to the left while the vertical center line remains unmoved. 	▶	The right and left vertical lines are shifted to the right while the vertical center line remains unmoved. 

4 **Press the SIZE key.**

5 **Adjust with the ◀ and ▶ keys until parts (a) on the right and left are 15 — 20 mm long.**

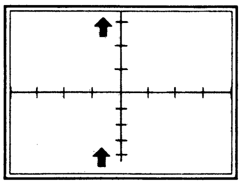
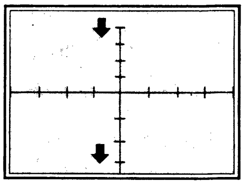
◀	The horizontal size is reduced. 	▶	The horizontal size is expanded. 

6 **If they are not aligned, press the LIN key and repeat steps 3 to 5.**

7 **If the center of the cross hair pattern is off-centered on the screen, perform the centering adjustment again and repeat steps 1 to 6 for the horizontal size adjustment.**

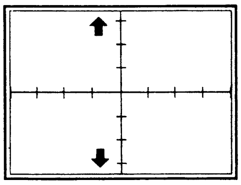
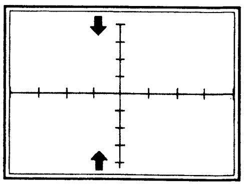
8 **Press LIN key.**

9 **Adjust with the ▲ and ▼ keys until parts (b) at the top and bottom are of equal length.**

▲	The upper and lower horizontal lines are shifted upward while the horizontal center line remains unmoved. 	▼	The upper and lower horizontal lines are shifted downward while the horizontal center line remains unmoved. 

10 **Press the SIZE key.**

11 **Adjust with the ▲ and ▼ keys until parts (b) at the top and bottom are about 15 — 20 mm long.**

▲	The vertital size is expanded. 	▼	The vertital size is reduced. 

12 **If they are not aligned, repeat steps 8 to 11.**

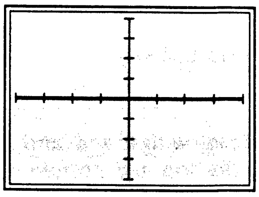
13 **If the center of the cross hair pattern is off-centered on the screen, perform the centering adjustment again and then repeat steps 8 to 12 for the vertical size adjustment.**

14 **After the adjustment is complete, press MEMORY to save the data.**

3 Green SKEW and BOW adjustments

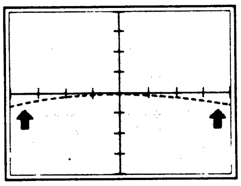
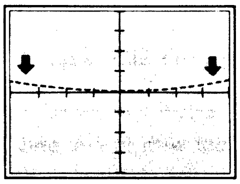
Display the cross hair pattern and adjust the bow-like or skew distortion of the horizontal and vertical center lines to make them parallel to the screen edges.

A. Horizontal line adjustment
Pay attention only to the bold line (horizontal center line).



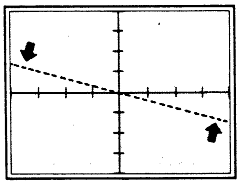
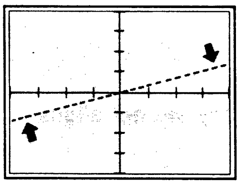
1 **Press BOW key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Adjust distortion as illustrated below with the ▲ and ▼ keys.**

▲	The right and left sides of the line are curved upward while the center remains unchanged. 	▼	The right and left sides of the line are curved downward while the center remains unchanged. 

3 **Press the SKEW key.**

4 **Adjust distortion as illustrated below with the ▲ and ▼ keys.**

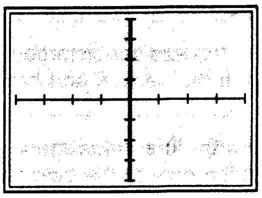
▲	The horizontal line leans toward upper right. 	▼	The horizontal line leans toward lower right. 

5 **Repeat steps 1 to 4 until the horizontal lines become parallel to the screen edges.**

6 **When the adjustment is complete, press the MEMORY key to save the adjustment data.**

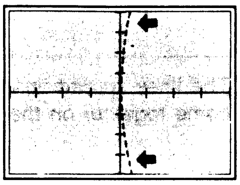
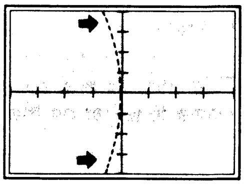
B. Vertical line adjustment

Pay attention only to the bold line (vertical center line).



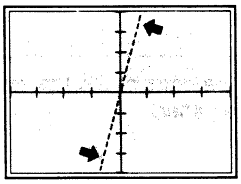
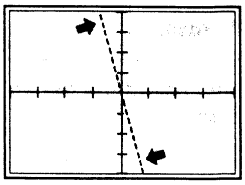
1 **Press BOW key.**

2 **Adjust distortion as illustrated below with the ◀ and ▶ keys.**

◀	The upper and lower parts of the line are curved leftward while the center remains unchanged. 	▶	The upper and lower parts of the line are curved rightward while the center remains unchanged. 

3 **Press the SKEW key.**

4 **Adjust distortion as illustrated below with the ◀ and ▶ keys.**

◀	The vertical line leans leftward. 	▶	The vertical line leans rightward. 

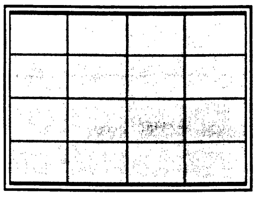
5 **Repeat steps 1 to 4 until the vertical line becomes parallel to the screen edges.**

6 **When the adjustment is complete, press the MEMORY key to save the adjustment data.**

4 Green KEY (keystone) and PIN (pincushion) adjustments

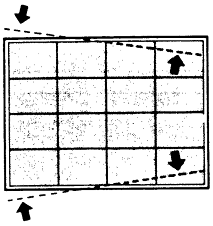
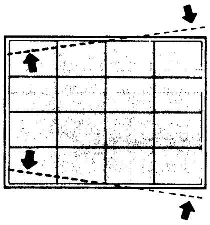
Adjust the trapezoidal distortion and the pin-cushion distortion in the vertical and horizontal directions.

A. Horizontal line adjustment
Pay attention only to the bold lines (top and bottom horizontal lines).



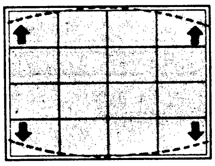
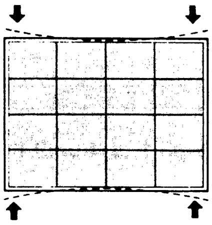
1 **Press the KEY key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Adjust distortion as illustrated below with the ▲ and ▼ keys.**

▲	The lines spread apart on the right side and come together on the left side. 	▼	The lines spread apart on the left side and come together on the right side. 

3 **Press the PIN key.**

4 **Adjust distortion as illustrated below with the ▲ and ▼ keys.**

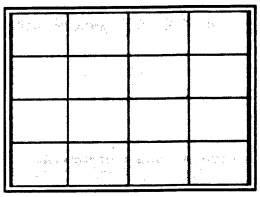
▲	The ends of the top and bottom lines spread apart. 	▼	The ends of the top and bottom lines come together. 

5 **Repeat steps 1 to 4 until the horizontal lines become parallel to the screen edges.**

6 **When the adjustment is complete, press the MEMORY key to save the adjustment data.**

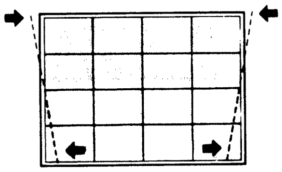
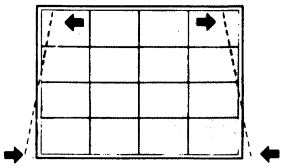
B. Vertical line adjustment

Pay attention only to the bold lines (right and left side vertical lines).



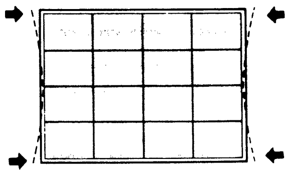
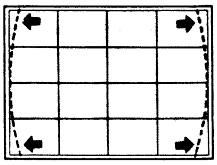
1 **Press the KEY key.**

2 **Adjust distortion as illustrated below with the ◀ and ▶ keys.**

◀	The lines spread apart at the bottom and come together at the top. 	▶	The lines spread apart at the top and come together at the bottom. 

3 **Press the PIN key.**

4 **Adjust distortion as illustrated below with the ◀ and ▶ keys.**

◀	The ends of the right and left side lines come together. 	▶	The ends of the right and left side lines spread apart. 

5 **Repeat steps 1 to 4 to make the vertical lines parallel to the screen edges.**

6 **When the adjustment is complete, press the MEMORY key to save the adjustment data.**

The green registration adjustment is complete.
Proceed to the adjustment for the red signal.

Red Registration Adjustment

Adjust the red signal so that it converges with the green signal and is seen as yellow.

5 Red centering adjustment

Adjust so that the center of the red test pattern is aligned with that of the green pattern.

1 **Press the ZONE key.**
The hatch pattern and the cursor are displayed.
If the cursor is not centered, press the POSITION key to move it to the center of the screen.

2 **Press the ADJ R key.**

3 **Press the CUT OFF B key to display green and red.**

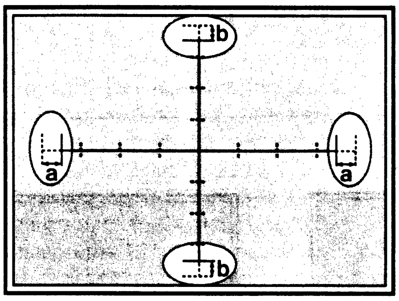
4 **Press the arrow keys to align the center of the red hatch pattern with that of the green pattern.**

Note
At this time perform the ZONE adjustment for the center zone only.

6 Red SIZE and LIN (linearity) adjustments

1 **Press the LIN key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Press the ADJ R key.**
Pay attention only to the encircled portions.



----: green —: red

3 **Move the red lines with the ◀ and ▶ keys until parts ⓐ on the right and left are of equal length.**

◀: The right and left vertical lines are shifted to the left while the vertical center line remains unmoved.
▶: The right and left vertical lines are shifted to the right while the vertical center line remains unmoved.

4 **Press the SIZE key.**

5 **Adjust with the ◀ and ▶ keys so that the red and green lines in the right and left encircled portions converge.**

◀: The horizontal size is reduced.
▶: The horizontal size is expanded.

6 **If adjustment fails, press the LIN key and then repeat steps 3 to 5.**

7 **If the center of the cross hair pattern is off-centered on the screen, perform the centering adjustment again and repeat steps 1 to 6 for horizontal size adjustment.**

8 **Press the LIN key.**

9 **Move the red lines with the ▲ and ▼ keys until parts ⓑ at the top and bottom are of equal length.**

▲: The upper and lower horizontal lines are shifted upward while the horizontal center line remains unmoved.
▼: The upper and lower horizontal lines are shifted downward while the horizontal center line remains unmoved.

10 **Press the SIZE key.**

11 **Adjust with the ▲ and ▼ keys so that the red and green lines at the top and bottom encircled portions converge.**

▲: The vertical size is expanded.
▼: The vertical size is reduced.

12 **If adjustment fails, repeat steps 8 to 11.**

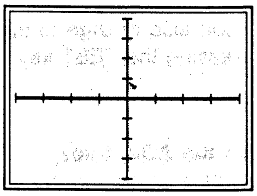
13 **If the center of the cross hair pattern is off-centered on the screen, perform the centering adjustment again and repeat steps 8 to 12 for vertical size adjustment.**

14 **After the adjustment is complete, press the MEMORY key to save the data.**

7 Red SKEW and BOW adjustments

A. Horizontal line adjustment

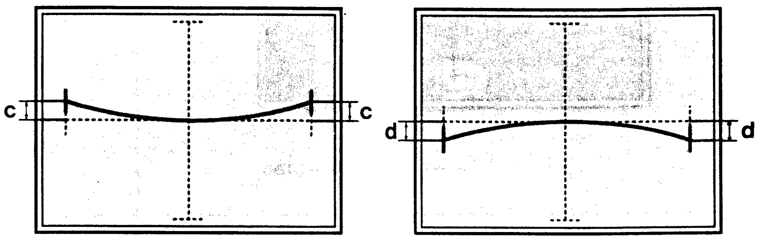
Pay attention only to the bold line (horizontal center line).



1 **Press the BOW key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Adjust with the ▲ and ▼ keys so that the vertically distorted parts ⓒ (or ⓓ) on both sides are of equal length.**

▲: The right and left sides of the lines are curved upward while the center remains unchanged.
▼: The right and left sides of the lines are curved downward while the center remains unchanged.

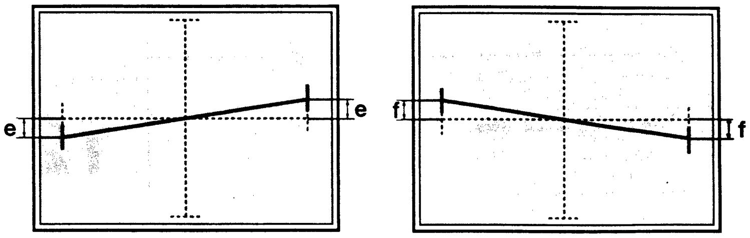


----: green —: red

3 **Press the SKEW key.**

4 **Adjust with the ▲ and ▼ keys so that the vertically distorted parts ⓔ (or ⓕ) on both sides are of equal length.**

▲: The horizontal line leans toward upper right.
▼: The horizontal line leans toward lower right.



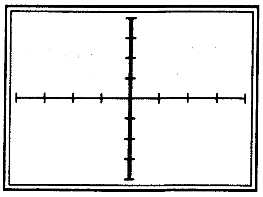
----: green —: red

5 **Repeat steps 1 to 4 until the red horizontal line converges with the green line.**

6 **When the adjustment is complete, press the MEMORY key to save the adjustment data.**

B. Vertical line adjustment

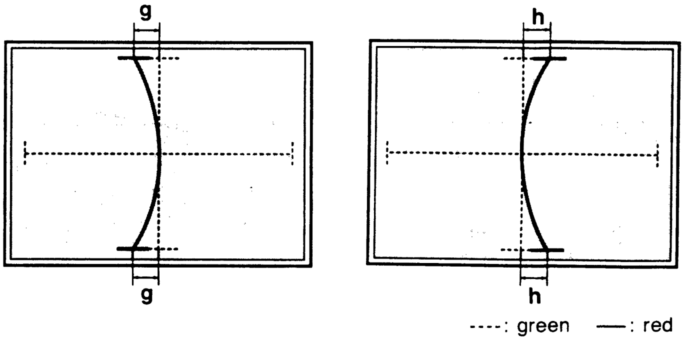
Pay attentin only to the bold line (vertical center line).



1 **Press the BOW key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Adjust with the ◀ and ▶ keys so that the horizontally distorted parts ⓖ (or ⓗ) at the top and bottom are of equal length.**

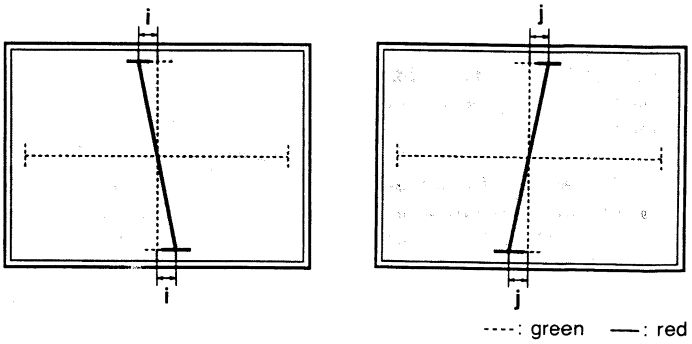
- ◀: The upper and lower parts of the line are curved leftward while its center remains unchanged.
- ▶: The upper and lower parts of the line are curved rightward while its center remains unchanged.



3 **Press the SKEW key.**

4 **Adjust with the ◀ and ▶ keys so that the horizontally distorted parts ⓘ (or ⓙ) at the top and bottom are of equal length.**

- ◀: The vertical line leans leftward.
- ▶: The vertical line leans rightward.



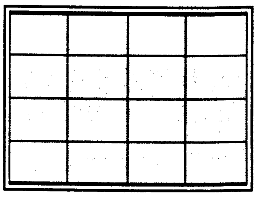
5 **Repeat steps 1 to 4 until the red vertical line converges with the green line.**

6 **When the adjustment is complete, press the MEMORY key to save the data.**

8 Red KEY (keystone) and PIN (pincushion) adjustments

A. Horizontal line adjustment

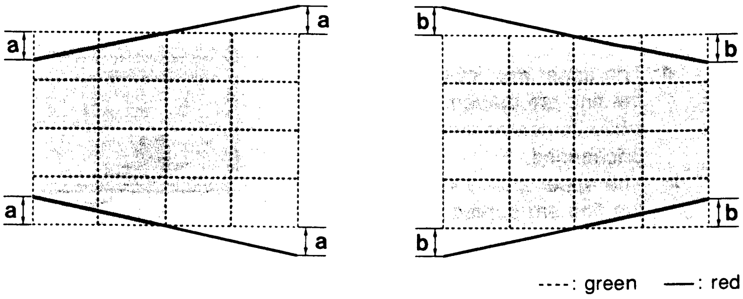
Pay attention only to the bold lines (top and bottom lines).



1 **Press the KEY key.**
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Adjust with the ▲ and ▼ keys so that the vertically distorted parts ⓐ (or ⓑ) are of equal length.**

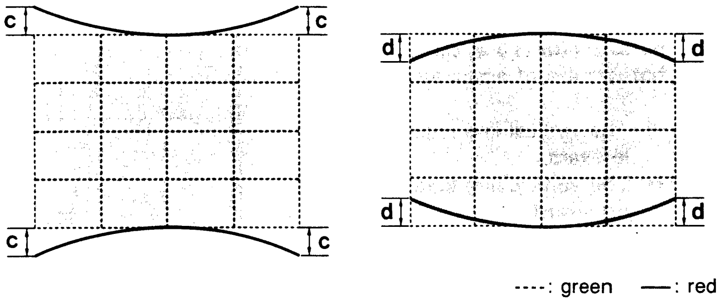
- ▲: The lines spread apart on the right and come together on the left.
- ▼: The lines spread apart on the left and come together on the right.



3 **Press the PIN key.**

4 **Adjust with the ▲ and ▼ keys so that the vertically distorted parts ⓒ (or ⓓ) are of equal length.**

- ▲: The ends of the top and bottom lines spread apart.
- ▼: The ends of the top and bottom lines come together.

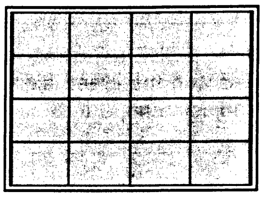


5 **Repeat steps 1 to 4 until the red horizontal lines converge with the green lines.**

6 **When the adjustment is complete, press the MEMORY key to save the data.**

B. Vertical line adjustment

Pay attention only to the bold lines (right and left side lines).



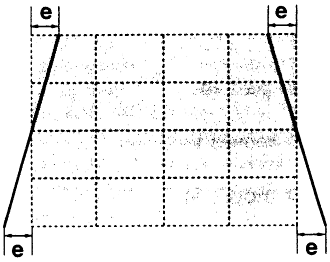
1 **Press the KEY key.**

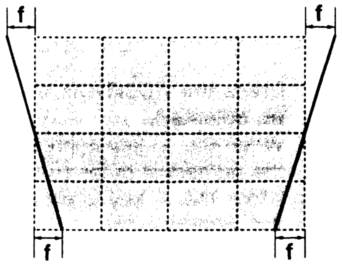
You can also change to the 9 × 9 hatch pattern by pressing the TEST key.

2 **Adjust with the ◀ and ▶ keys so that horizontally distorted parts ⓔ (or ⓕ) are of equal length.**

◀: The lines spread apart at the bottom and come together at the top.

▶: The lines spread apart at the top and come together at the bottom.





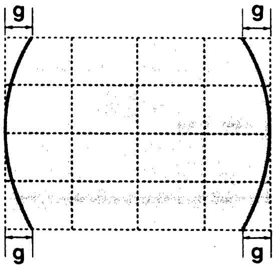
----: green —: red

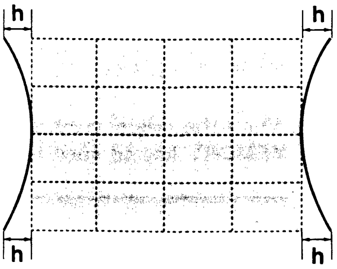
3 **Press the PIN key.**

4 **Adjust with the ◀ and ▶ keys so that the horizontally distorted parts ⓖ (or ⓗ) are of equal length.**

◀: The ends of the right and left side lines come together.

▶: The ends of the right and left side lines spread apart.





----: green —: red

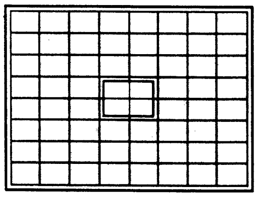
5 **Repeat steps 1 to 4 until the red vertical lines converge with the green lines.**

6 **When the adjustment is complete, press the MEMORY key to save the data.**

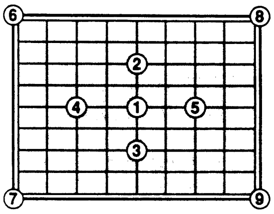
9 Red ZONE adjustment

Perform the ZONE adjustment after the red signal has converged with the green signal as far as possible in the red adjustments 5 to 8.

1 **Press the ZONE key.**
The hatch pattern and the cursor are displayed.



2 **Press the POSITION key to select the part to be adjusted.**
When the + key is pressed, the cursor moves in the numerical order as illustrated.
When the − key is pressed, the cursor moves in the reverse order.

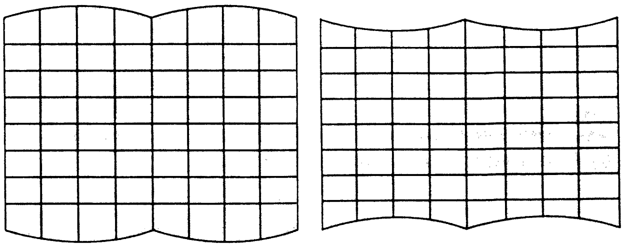


3 **Adjust the red line distortion in the area of the cursor position with the arrow keys.**

Adjustment hint
After you adjust the distortion in zones 6 to 9, there may still be distortion at a line inside. In this case, adjust equally noting the outermost line and one line inside.

4 **When the adjustment is complete, press the MEMORY key to save the data.**

ZONE adjustment hint
If the KEY and PIN adjustments are not performed enough before performing the ZONE adjustment, the distortions as illustrated may often be seen. (The illustrations show the horizontal distortions, but similar distortions occur with the vertical lines.)
In these cases, reset the ZONE adjustment data and then start with the KEY and PIN adjustments again.



The red registration adjustment is complete.
Proceed to the registration adjustment of the blue signal.

Blue Registration Adjustment

Adjust the blue signal so that it converges with the red signal which has been adjusted. When the blue and red test patterns converge, the pattern is seen as magenta.

10 Blue centering adjustment

Adjust so that the center of the blue test pattern is aligned with that of the red pattern.

1 **Press the ZONE key.**

2 **Press the ADJ B key.**

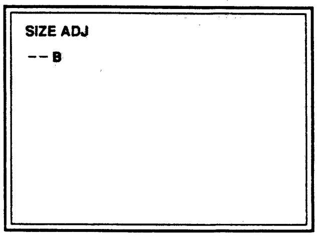
3 **Press the CUT OFF G key to display blue and red.**

4 **Press the arrow keys until the center of the blue hatch pattern is aligned with that of the green pattern.**

Note
At this time perform the ZONE adjustment for the center zone only.

11 Blue SIZE, LIN (linearity), SKEW, BOW, KEY (keystone), PIN (pincushion) and ZONE adjustments

Adjust so that the blue signal converges with the red signal in each adjustment. The procedures are the same as for the red registration adjustments.
Make sure that "ADJ B" is displayed on the screen when adjusting the blue signal.



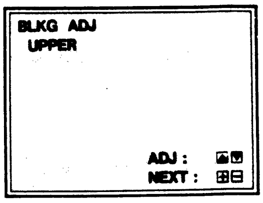
SIZE ADJ
--B

When the blue adjustment is complete, press the MEMORY key to save the adjustment data.

Blanking Adjustment

After the registration adjustments, perform this adjustment to erase a rainbow-like vertical band at the right side or a diagonal line at the upper part of the screen.

1. **Press the BLKG key.**



BLKG ADJ
UPPER

ADJ : ▲▼
NEXT : ⊞⊟

2. **Press the TEST key.**
   The hatch pattern is displayed.

3. **Press the POSITION +/− key to select the part to be adjusted.**
   When the + key is pressed, the position will change as follows:

   UPPER → LOWER → LEFT → RIGHT

   When the − key is pressed, the position will change in the reverse of the above order.

4. **Adjust with the arrow keys.**
   Press the ▲ and ▼ keys to adjust the UPPER and LOWER parts.
   A diagonal line at the upper part will be erased with the UPPER adjustment.
   Press the ◀ and ▶ keys to adjust the LEFT and RIGHT parts.
   A rainbow-like vertical band at the right side will be erased with the RIGHT adjustment.

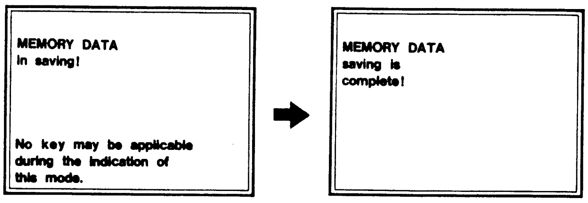
5. **When the adjustment is complete, press the MEMORY key to save the adjustment data.**

Saving the Standard Registration Data

When the registration adjustments for the green, red and blue signals are complete, save the adjusted data as standard data.

1 **Press the MEMORY key. (Do not keep this key pressed.)**
The adjusted data is saved in the memory of an internal signal whose horizontal frequency is approximately 34 kHz.

Note
During saving, other keys do not function.

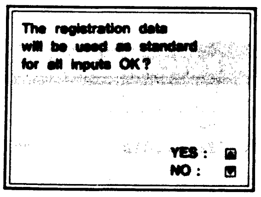


MEMORY DATA
In saving!

No key may be applicable
during the indication of
this mode.

MEMORY DATA
saving is
complete!

2 **Keep pressing the MEMORY key for more than 3 seconds.**
The projector enters the standard data saving mode.



The registration data
will be used as standard
for all inputs OK?

YES : ▲
NO : ▼

3 **Press the ▲ key (for YES).**
All the registration data will be converted into the data of the internal signal and are saved as standard data.

Note
If the adjustment data are saved as standard data, the registration data with other horizontal frequencies will be converted into the standard data if they have not been saved before.

Memory structure

This projector saves the adjustment data in one of six memories according to the horizontal frequency of the input signal.
The acceptable horizontal frequency is divided into six groups with each group assigned to a different memory.

1 fH = 15kHz — 19kHz
2 fH = 19kHz — 24kHz
3 fH = 24kHz — 30kHz
4 fH = 30kHz — 37kHz
5 fH = 37kHz — 45kHz
6 fH = 45kHz — 50kHz

When a signal is input, its horizontal frequency is automatically detected and the memory is selected.
When you perform registration adjustment with no input, the registration adjustment is performed with the projector's internal signal, whose horizontal frequency is approximately 34kHz. So the adjustment data is saved in memory 4.
If the adjustment data is saved as standard data, the factory preset data for all the memories will be calculated and changed to reflect the new registration information.
By this operation the standard data in that installation condition is saved, which makes the subsequent adjustment for each input signal easier.
Follow the two steps below.

1. **After installation, perform registration adjustment with no input and save the adjustment data. Then save the adjusted data as standard data.**
2. **Perform installation adjustment for each input signal and save the adjustment data.**

For reference — Memory architecture

Memory Name	Memory Data	How the projector recognizes data	When data is memorized
Channel Memory	Picture control	Input connector	When the input connector is switched When the power is turned off with the Remote Commander
Status Memory	RGB SIZE, SHIFT Blanking SECAM ON/OFF CLEAR BLUE ON/OFF Color temperature (9300/6500/3200/Preset)	Horizontal and vertical frequency Condition of sync signal Input connector	When the MEMORY key is pressed When the power is turned off with the Remote Commander
Registration Memory	Registration	Horizontal frequency of the input signal	When the MEMORY key is pressed When the input connector is switched When the horizontal frequency is changed When the power is turned off with the Remote Commander
Color Temperature Memory	W/B Bias and Gain	Status memory	When MEMORY key is pressed When the input connector is switched When the color temperature is changed When the power is turned off with the Remote Commander

Notes
- When the power is turned off with the Commander, all the data is saved and when the power is turned on again, the data will be recovered.
- **Turn off the main power on the projector after turning off the power on the Commander. Otherwise the data will not be saved.**

1-16. FINE ADJUSTMENT OF EACH INPUT SIGNAL

After the registration adjustment is performed with no input source connected and the adjusted data are saved as standard data, next input an external signal and carry out the fine adjustment and other adjustments.

Fine Adjustment of Video Input Signal

1 **Connect the video signal source.**
Connect to the VIDEO IN jack on the projector or to the PC-1271M switcher connected to the projector.

2 **Select the input to be adjusted.**
Press the INPUT SELECT VIDEO key on the Remote Commander. Or, set the SWITCHER/INDEX select switch to SWITCHER and then from among the number keys from 1 to 8, press a key for a video input source.

3 **Press the PAGE key four times.**
Check that the horizontal frequency of the input signal ("fH") indicates 15.7 kHz.

Fine registration adjustment

1 **Press the TEST key to display the cross hatch pattern.**

2 **If necessary, perform the fine adjustment.**

3 **When the fine adjustment is complete, press the MEMORY key to save the adjusted data.** (Do not keep it pressed.)
The adjusted value will be saved normally.

SIZE Adjustment

Adjust the size of the picture if it does not fit the screen.

1 **Press the SIZE key.**

2 **Press the ADJ G key.**

3 **Keep pressing the TEST key for more than 5 seconds.**
The video input picture is displayed.
The projector enters into the SIZE fine adjustment mode.
"FINE" is displayed on the screen.

4 **Adjust with the arrow keys.**

▲: The vertical size is expanded.
▼: The vertical size is reduced.
▶: The horizontal size is expanded.
◀: The horizontal size is reduced.

5 **After the adjustment is complete, press the MEMORY key.**
The adjusted data will be saved.

Blanking Adjustment

If the displayed picture is bigger than the screen, cut off the excess parts.

1 **Press the BLKG key.**

2 **Press the POSITION +/- key to select the part to be adjusted.**
When the + key is pressed, the position will change as follows:

UPPER → LOWER → LEFT → RIGHT

When the - key is pressed, the position will change in the reverse of the above order.

3 **Adjust with the arrow keys.**
Press ▲ and ▼ keys to adjust the UPPER and LOWER positions.
Press ◀ and ▶ keys to adjust the LEFT and RIGHT positions.

4 **After the adjustment is complete, press the MEMORY key.**
The adjusted data will be saved.

Fine Adjustment of the RGB Input Signal

1 **Connect the RGB input source.**
Connect to the RGB IN connector on the projector or to the PC-1271M switcher box connected to the projector.

2 **Select the input to be adjusted.**
Press the INPUT SELECT A key on the Remote Commander. Or, set the SWITCHER/INDEX select switch to SWITCHER and then from among the number keys from 1 to 8, press a key for an RGB input source.

3 **Press the PAGE key four times to check the horizontal frequency ("fH") of the input signal.**
If "fH" indicates 30 — 37 kHz (the range of memory 4), the fine adjustment is not necessry.
For the input signals of other "fH", perform the fine adjustment.

Fine registration adjustment

1 **Press the TEST key to display the cross hatch pattern.**

2 **If necessary, perform the fine registration adjustment.**

3 **When two or more RGB input sources are connected, group them according to the horizontal frequency by checking the "fH" in the PAGE display.**

4 **Perform the fine registration adjustment for each group.**
After the adjustment is complete, press the MEMORY key.
(Do not keep this key pressed.)
The adjusted data will be saved.

Adjustment hint
The projector saves the registration adjustment data in one of six memories according to the horizontal frequency of the input signals.
When two or more signals are input,
you need to perform the fine adjustment for each group. If two or more input signals are grouped into the same memory, perform the adjustment for any one of them.

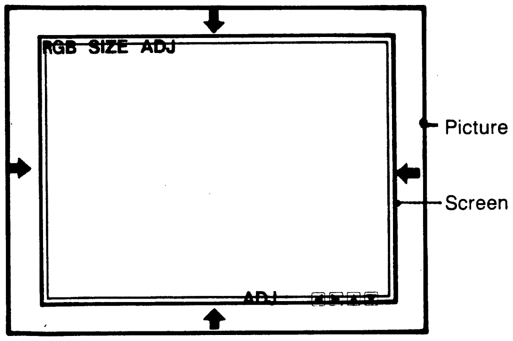
RGB SIZE Adjustment

If the size of the picture does not fit the screen, adjust the RGB SIZE adjustment.

1 **Press the RGB SIZE key.**

2 **Adjust with the arrow keys so that the picture fits the screen.**

▲: The vertical size is expanded.
▼: The vertical size is reduced.
▶: The horizontal size is expanded.
◀: The horizontal size is reduced.



3 **When the adjustment is complete, press the MEMORY key.**
The adjusted data will be saved.

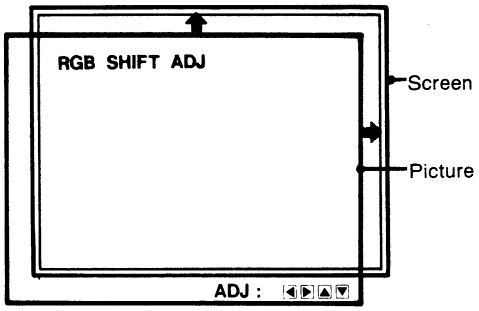
RGB SHIFT Adjustment

If the picture needs to be shifted to fit the screen, adjust the RGB SHIFT adjustment.

1 **Press the RGB SHIFT key.**

2 **Adjust with the arrow keys so that the picture fits the screen.**

▲: The picture is shifted upward.
▼: The picture is shifted downward.
◀: The picture is shifted leftward.
▶: The picture is shifted rightward.



3 **When the adjustment is complete, press the MEMORY key.**
The adjusted data will be saved.

Blanking Adjustment

If the displayed picture is bigger than the screen, cut off the excess parts.

1 **Press the BLKG key.**

2 **Press the POSITION +/− key to select the part to be adjusted.**
When the + key is pressed, the position will change as follows:

UPPER → LOWER → LEFT → RIGHT

When the − key is pressed, the position will change in the reverse of the above order.

3 **Adjust with the arrow keys.**
Press the ▲ and ▼ keys to adjust the UPPER and LOWER positions.
Press the ◀ and ▶ keys to adjust the LEFT and RIGHT positions.

4 **When the adjustment is complete, press the MEMORY key.**
The adjusted data will be saved.

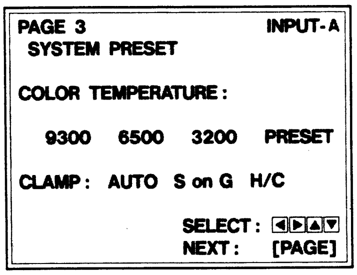
White Balance Adjustment

The color temperatures are preset at the factory to 9300K, 6500K and 3200K, and will be selected automatically according to the input signal. Normally, you need not adjust the white balance to get natural colors. However, if you want to set the color temperature to your own level, you can adjust the white balance and save it in the memory.

To adjust the white balance, perform the BIAS (for black level) and GAIN (for white level) adjustments repeatedly. While adjusting the white balance, the contrast ("CONTR") and the brightness ("BRT") levels of the picture are automatically set to 80 and 50, respectively.

Preparation

1 **Press the PAGE key three times to display "PAGE 3".**



PAGE 3 INPUT-A
SYSTEM PRESET

COLOR TEMPERATURE:

9300 6500 3200 PRESET

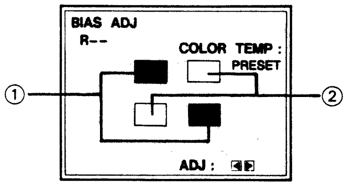
CLAMP: AUTO S on G H/C

SELECT: ◀▶▲▼
NEXT: [PAGE]

2 **Select PRESET with the arrow keys.**

BIAS adjustment (black level adjustment)

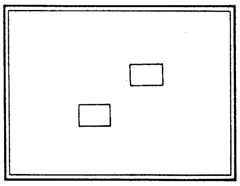
1 **Press the W/B BIAS key.**
The PLUGE pattern is displayed.



2 **Press the ADJ R, G or B key to select the color to be adjusted.**

3 **Adjust the brightness of the selected color with the ◀ and ▶ keys.**

▶: The display becomes brighter.
◀: The display becomes darker.

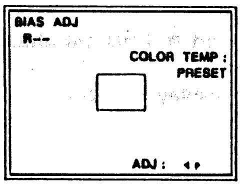


Make the black in the parts ① as dark as possible, so that finally the background and the parts ① look the same and the parts ② look slightly brighter.

4 **Press the MEMORY key.**
The adjusted data will be saved.

GAIN adjustment (white level adjustment)

1 **Press the W/B GAIN key.**
The window pattern is displayed.



2 **Press the ADJ R or B key to select the color to be adjusted.**
It is not necessary to adjust the green signal.

3 **Adjust the brightness of the selected color with the ◄ and ► keys.**

►: The display becomes brighter.
◄: The display becomes darker.

Adjust until the center of the screen indicated as ▭ becomes white.

4 **Press the MEMORY key.**
The adjusted data will be saved.

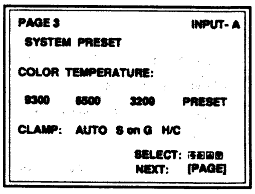
White balance adjustment hint
The adjustment is normally performed by displaying the test patterns. However, it is possible to adjust the white balance with an external input signal displayed. To display the input signal, keep pressing the TEST key for more than 5 seconds.

Note
The color temperature adjusted by selecting PRESET can only be reproduced when the signal on which it was adjusted is connected.

If the Luminance of the Picture is Incorrect — Clamp Setting

Clamp is used as a standard for setting the black level of the picture correctly. The standard position of the clamp depends on the kind of the sync signal. Normally the CPU may judges the signal and sets the clamp position automatically.
However, the CPU may misjudge the signal because of noise. If the luminance of the picture seems to be incorrect (too dark, the black color is too light, or the luminance is unstable), the clamp position may need to be changed.
In such case, change the clamp position following the procedure below.

1 **Press the PAGE key 3 times.**



2 **Select the clamp position by pressing ◄, ►, ▲ and ▼ keys.**

AUTO : Automatic setting mode. Normally, set to this position.
S on G : If the black color is too light or seems to be green, set to this position.
H/C : If the picture is too dark or the luminance is unstable, set to this position.

3 **Press the MEMORY key to save the data.**

If the luminance is still incorrect after changing the clamp setting
There may be other problems with the input signal or connection. Check the input signal.

1-17. DATA RESET

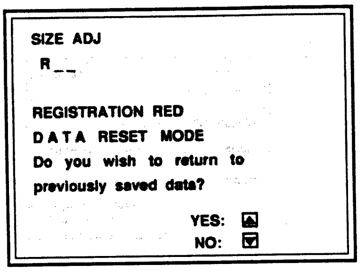
There are two possibilities for data reset, the data reset and factory reset.

Previous data reset	The data are reset to the previously saved data (the data before the adjustment).
Factory reset	The data are reset to the factory preset level. The factory reset can be performed after the previous data reset.

How to Reset the Data

1 **Select the adjustment mode to be reset.**

2 **Press the ◀ and ▶ keys simultaneously.**
The following display appears.



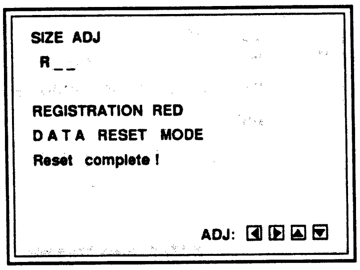
```
SIZE ADJ
 R__

REGISTRATION RED
DATA RESET MODE
Do you wish to return to
previously saved data?

                 YES: ▲
                  NO: ▼
```

(ex. To reset the red size adjustment data to the previously saved data)

3 **Press the ▲ key.**



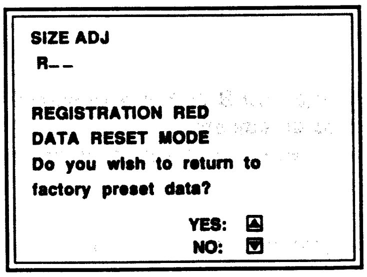
```
SIZE ADJ
 R__

REGISTRATION RED
DATA RESET MODE
Reset complete !


               ADJ: ◀ ▶ ▲ ▼
```

The data will be reset to the previously saved data. (Previous data reset)

4 **Press the ◀ and ▶ keys simultaneously again.**
The following display appears.



```
SIZE ADJ
R__

REGISTRATION RED
DATA RESET MODE
Do you wish to return to
factory preset data?

                 YES: ▲
                  NO: ▼
```

(ex. To reset the red size adjustment data to the factory preset level)

5 **Press the ▲ key.**
The data will be reset to the factory preset level. (Factory reset)

Resetting the Registration Standard Data to the Factory Preset Levels

If the registration data was adjusted and saved, you need reset the data to the factory preset levels before starting the registration adjustment.

1 **Press the CENT R and B keys simultaneously to enter the green centering adjustment mode.**

2 **Follow steps 2 to 5.**
The centering adjustment data of the red, green and blue signals are reset to the factory preset levels.

3 **Press the SIZE key.**

4 **Press the ADJ G key and then perform the factory reset operation.**
The SIZE, LIN, SKEW, BOW, KEY, PIN and ZONE adjustment data are reset to the factory preset levels.

5 **Press the ADJ R key and then perform the factory reset operation.**
The SIZE, LIN, SKEW, BOW, KEY, PIN and ZONE adjustment data are reset to the factory preset levels.

6 **Press the ADJ B key and then perform the factory reset operation.**
The SIZE, LIN, SKEW, BOW, KEY, PIN and ZONE adjustment data are reset to the factory preset levels.

7 **Press the BLKG key.**

8 **Press the TEST key and then perform the factory reset operation.**
The UPPER, LOWER, LEFT and RIGHT blanking adjustment data are reset.

**The resetting of the standard data to the factory preset levels is complete.
Then start the registration adjustment.**

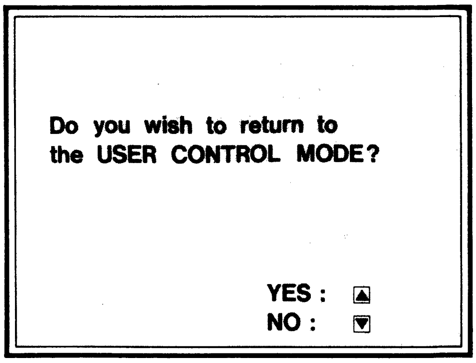
For reference — Mode and data reset correspondence

Mode	Data to be reset
RGB Size	H-size and V-size
RGB Shift	H-shift and V-shift
G-centering	Centering data for all colors
R-centering	Not applicable
B-centering	Not applicable
Size, Linearity Skew, Bow Keystone, Pincushion	All the registration data for the selected color (including the Zone data)
Zone	Zone data for the selected color
Blanking	UPPER/LOWER/LEFT/RIGHT side blanking data
Gain, Bias	All the Bias and Gain data for all colors at the current color temperature

1-18. TO ACTIVATE THE PROTECTION ON THE REMOTE COMMANDER

When you turn off the projector, the adjustment keys become inoperable in order to prevent the users from changing the registration adjustments.
It is also possible to make the keys inoperable while the power is on in the following way.

1 **Keep pressing the NORMAL key for at least 3 seconds.**



Do you wish to return to the USER CONTROL MODE?

YES : ▲
NO : ▼

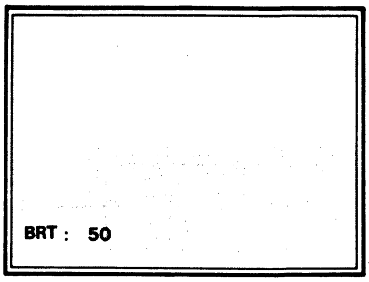
2 **Press the ▲ key.**
The adjustment keys are now inoperable.

1-19. PICTURE ADJUSTMENT

Adjust the picture for your preference. The adjusted data can be saved in the memory.

1 **Adjust with the PICTURE CONTROL +/− keys.**

CONTR	picture contrast
COLOR	color intensity
BRT	brightness
SHARP	sharpness
HUE	hue

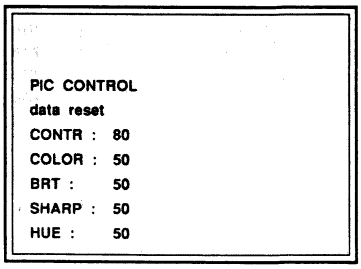


BRT : 50

2 **When the adjustment is complete, press the MEMORY key.**

To restore the factory preset levels

Press the RESET key.
The factory preset levels are displayed on the screen.



PIC CONTROL
data reset
CONTR : 80
COLOR : 50
BRT : 50
SHARP : 50
HUE : 50

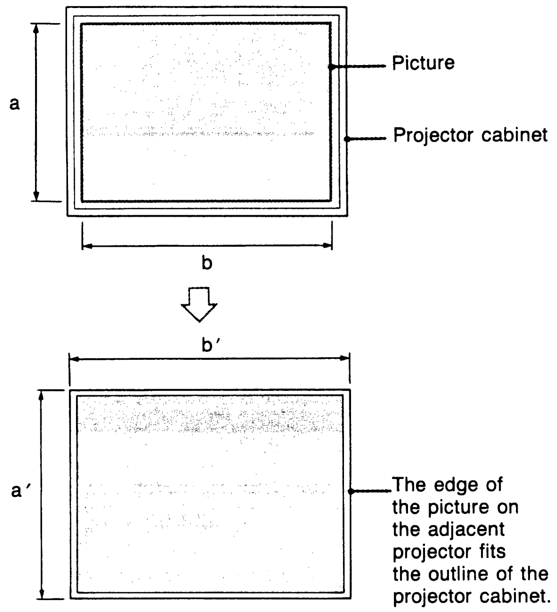
Notes

- The COLOR, SHARP and HUE keys do not function on the pictures input from the RGB IN connectors.
- The HUE and COLOR keys do not function if the input signal is black and white.
- The HUE key does not function with the PAL or SECAM color source.

1-20. ADJUSTING THE PROJECTION WALL SCREEN

After adjusting the white balance and registration on each projector, adjust the size and shift (position) of the picture on each screen so that the picture is displayed correctly as one projection wall picture.

When the signal is input through RGB IN connectors



The edge of the picture on the adjacent projector fits the outline of the projector cabinet.

1. **Display the signal from a multivideo processor on the screen and check that the pictures displayed on the projection wall screen are aligned correctly.**
   You can check easily by displaying a hatch pattern.

2. **Select the index number of the projector to be adjusted using the Commander.**
   Set the SWITCHER/INDEX select switch to INDEX and press the SWITCHER/INDEX number keys and ENTER key.

3. **Adjust the size and shift of the picture so that the edge of the picture fits the outline of the projector cabinet.**
   Use RGB SIZE, RGB SHIFT and arrow keys on the Commander.

4. **Repeat steps 2 and 3 for each projector, if necessary.**

Note
If the registration is not correctly adjusted, distortion may occur between the outline of the projector cabinet and the edge of the picture. In this case, readjust the registration.

When the signal is input through VIDEO IN connectors

1 **Display the signal from a multivideo processor on the screen and check that the pictures displayed on the projection wall screen are aligned correctly.**
You can check easily by displaying a hatch pattern.

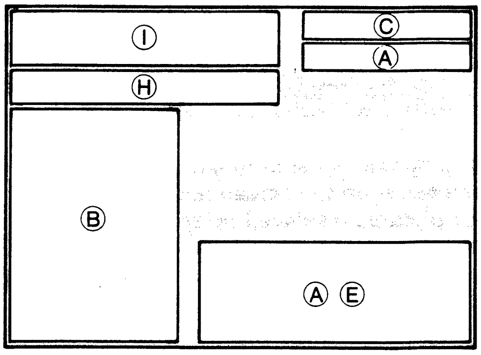
2 **Select the index number of the projector using the Commander.**
Set the SWITCHER/INDEX select switch to INDEX and press the SWITCHER/INDEX number keys and ENTER key.

3 **Adjust the size of the picture using the Commander.**
See "Fine adjustment of video input signal — SIZE adjustment"

4 **Repeat steps 2 and 3 for each projector, if necessary.**

1-21. LIST OF THE MESSAGES

Use the list below to check the meaning of the messages displayed on the screen.
The list is divided into sections depending on the location which the message appears. Check the location first, then refer to the alphabet for the section to find the message.



Ⓓ, Ⓕ, Ⓖ and a part of Ⓘ will appear all over the screen.

A Caution, Message	
•Not applicable!	•The key is not applicable in the current mode.
•Overflow!	•The adjustment data has passed the adjustable range limit, and does not change any more.
•PIC MUTE	•Picture mute mode is on.
•Input is not VIDEO.	•The input signal is not VIDEO.
•Input is not NTSC.	•The input signal is not NTSC.
•Input is not RGB.	•The input signal is not RGB.
•Input is B & W.	•The input signal is black and white.
•NO INPUT	•No signal is input.
B PIC CONTROL data	
•CONTR (CONTRAST)	•Contrast
•COLOR	•Color
•BRT (BRIGHTNESS)	•Brightness
•SHARP (SHARPNESS)	•Sharpness
•HUE	•Hue
•PIC CONTROL data reset	•Resets the PIC CONTROL data.
C Input channel, Index number	
•VIDEO	•Input from VIDEO IN
•INPUT-A	•Input from RGB IN
•SW'ER x-y (switcher x=1–2, y=1–8)	•Input from optional switcher
•00 — 99	•Index number
D PAGE	
Subtitle	
•USER PRESET	•User preset
•USER CONTROL	•User control
•SYSTEM PRESET	•System preset
•INPUT INFO (INPUT INFORMATION)	•Input information
PAGE 1	
•STATUS ON/OFF	•On-screen display on/off
•PIC MUTE ON/OFF	•Picture mute mode on/off
•CLEAR BLUE ON/OFF/---	•Clear blue mode on/off/does not function.
•SECAM ON/OFF/---	•Compulsive SECAM mode on/off/does not function.
PAGE 2	
•CONTR (CONTRAST)	•Contrast
•COLOR	•Color
•BRT (BRIGHTNESS)	•Brightness
•SHARP (SHARPNESS)	•Sharpness
•HUE	•Hue
•PIC CONTROL data reset	•Resets the PIC CONTROL data.
PAGE 3	
•COLOR TEMPERATURE: 9300/6500/3200/PRESET	•Color temperature is set to 9300/6500/3200/the data adjustable by the service personnel.
•CLAMP: AUTO/S on G/H/C	•Clamp position is set to automatic/internal/external sync signal position.
PAGE 4	
•INPUT SIGNAL	•Input signal
•Y/C	•S video input signal from VIDEO IN
•RGB	•RGB input signal
•NTSC	•NTSC input signal from VIDEO IN
•PAL	•PAL input signal from VIDEO IN
•SECAM	•SECAM input signal from VIDEO IN
•B & W	•Black and white input signal from VIDEO IN
•f_H	•Horizontal frequency
•f_V	•Vertical frequency
•Internal oscillation	•Internal oscillation mode (No signal is input.)
•H/C-SYNC	•Horizontal sync signal or composite sync signal
•V-SYNC	•Vertical sync signal
•SYNC ON G	•Composite video signal
•H/C-SYNC: POS/NEG/---	•The polarity of the H/C-SYNC is positive/negative/not input.
•V-SYNC: POS/NEG/---	•The polarity of the V-SYNC is positive/negative/not input.
•SYNC ON G: NEG/---	•The polarity of the SYNC ON G is negative/not input.

E Operation

•YES: ▲	•Press ▲ key for "Yes".
•NO: ▼	•Press ▼ key for "No".
•SELECT: ◀ ▶	•Press ◀ or ▶ key to select.
•SELECT: ◀ ▶ ▲ ▼	•Press, ◀, ▶, ▲ or ▼ key to select.
•ADJ: ◀ ▶ ▲ ▼	•Press ◀, ▶, ▲ or ▼ key to adjust.
•ADJ: ◀ ▶	•Press ◀ or ▶ key to adjust.
•ADJ: ▲ ▼	•Press ▲ or ▼ key to adjust.
•NEXT: ⊞ ⊟	•Press ⊞ key to move the cursor to the next position. Press ⊟ key to move the cursor to the previous position.
•NEXT: [PAGE]	•Press PAGE key to go to the next page.
•EXIT: [PAGE]	•Press PAGE key to exit the PAGE mode.
•EXIT: [NORMAL]	•Press NORMAL key to exit the TEST mode.

F Memory data

•MEMORY DATA in saving.	•Saving the memory data now.
•MEMORY DATA saving is complete!	•Saving the memory data is completed.
•No key may be applicable during the indication of this mode.	•When in this mode (MEMORY DATA saving), no key functions.
•The registration data will be used as standard for all inputs OK?	•Is it all right that this registration data will be used as standard for all inputs?

G Data reset

•Do you wish to return to factory preset data?	•Do you wish to reset the data to the factory preset data?
•Do you wish to return to previously saved data?	•Do you wish to reset the data to the previously saved data?
•Reset complete!	•Resetting is completed.
•RGB SIZE DATA RESET MODE	•RGB input size data resetting mode
•RGB SHIFT DATA RESET MODE	•RGB input shift data resetting mode
•BLANKING DATA RESET MODE	•Blanking data resetting mode
•CENTERING ALL COLOR DATA RESET MODE	•Centering data (all color) resetting mode
•W/B GAIN & BIAS ALL COLOR DATA RESET MODE	•Gain, bias (all color) data resetting mode
•REGISTRATION (RED/GREEN/BLUE) DATA RESET MODE	•Registration (red, green or blue) data resetting mode

H Raster

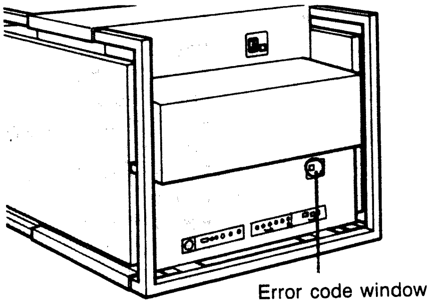
•RASTER R G B	•Red, green and blue are projected.
•RASTER R - -	•Only red is projected.
•RASTER - G -	•Only green is projected.
•RASTER - - B	•Only blue is projected.
•RASTER R G -	•Red and green are projected.
•RASTER R - B	•Red and blue are projected.
•RASTER - G B	•Green and blue are projected.

I Adjustment

•RGB SIZE ADJ	•RGB input size adjustment mode
•RGB SHIFT ADJ	•RGB input shift adjustment mode
•R CENT ADJ	•Red centering adjustment mode
•G CENT ADJ	•Green centering adjustment mode
•B CENT ADJ	•Blue centering adjustment mode
•SIZE ADJ	•Size adjustment mode
•LIN (LINEARITY) ADJ	•Linearity adjustment mode
•SKEW ADJ	•Skew adjustment mode
•BOW ADJ	•Bow adjustment mode
•KEY (KEYSTONE) ADJ	•Keystone adjustment mode
•PIN (PINCUSHION) ADJ	•Pincushion adjustment mode
•ZONE ADJ	•Zone adjustment mode
•BLKG ADJ UPPER/LOWER/LEFT/RIGHT	•Blanking adjustment (upper, lower, left, or right) mode
•BIAS ADJ	•White balance bias adjustment mode
•GAIN ADJ	•White balance gain adjustment mode
•Do you wish to enter into the SERVICEMAN CONTROL MODE?	•Do you wish to enter into the service-personnel control mode?
•Do you wish to return to the USER CONTROL MODE?	•Do you wish to return to the user control mode?

About the Error Codes

When an operational error occurs, the power will automatically turn off and the error code will light up on the error code window on the rear panel. Refer to the chart below for the meanings.



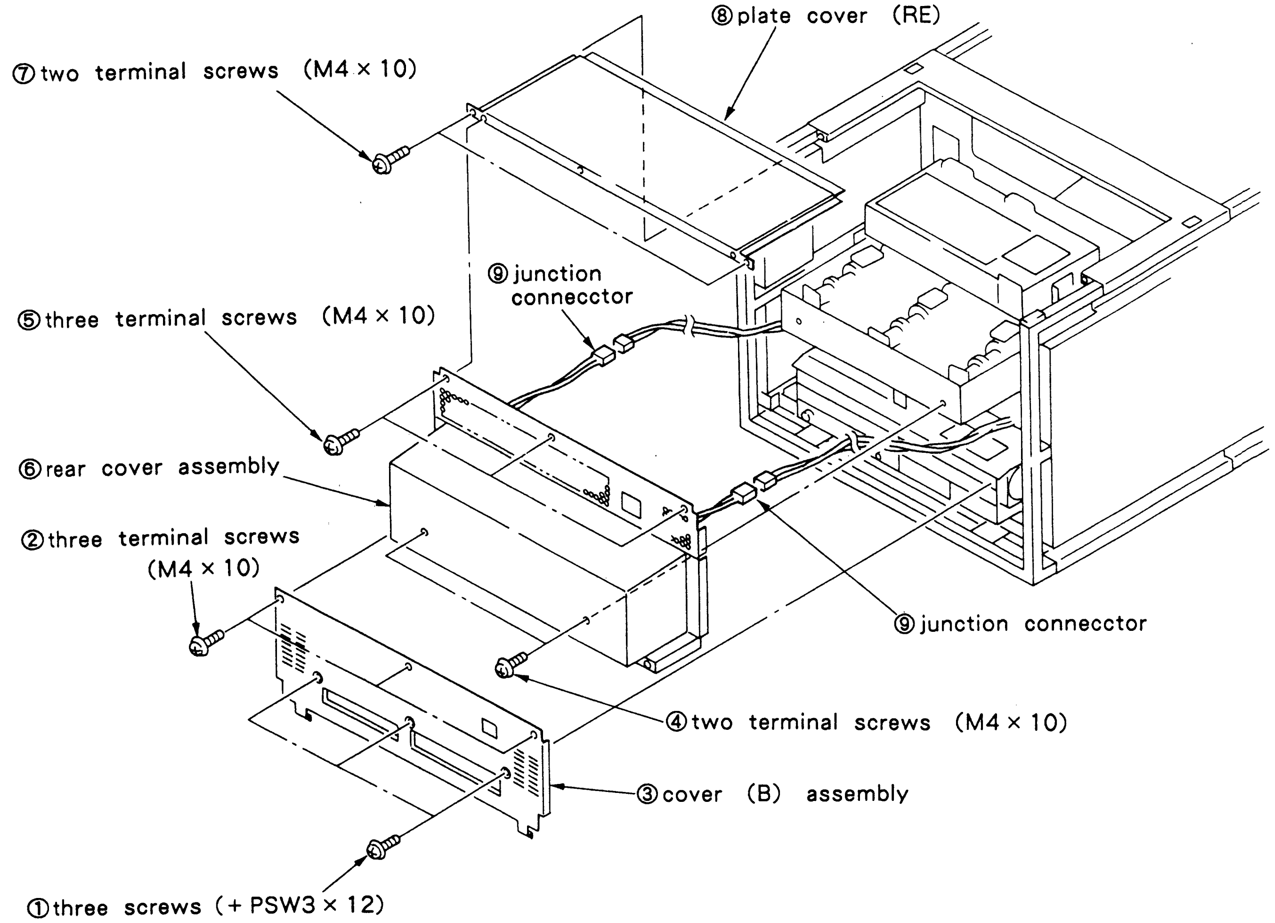
error / Code	FAN stop	100V down	IK-over	V-stop	HV-over	power-down
01	*	—	—	—	—	—
02	—	*	—	—	—	—
03	*	*	—	—	—	—
04	—	—	*	—	—	—
05	*	—	*	—	—	—
06	—	*	*	—	—	—
07	*	*	*	—	—	—
08	—	—	—	*	—	—
09	*	—	—	*	—	—
0A	—	*	—	*	—	—
0b	*	*	—	*	—	—
0C	—	—	*	*	—	—
0d	*	—	*	*	—	—
0E	—	*	*	*	—	—
0_	*	*	*	*	—	—
10	—	—	—	—	*	—
11	*	—	—	—	*	—
12	—	*	—	—	*	—
13	*	*	—	—	*	—
14	—	—	*	—	*	—
15	*	—	*	—	*	—
16	—	*	*	—	*	—
17	*	*	*	—	*	—
18	—	—	—	*	*	—
19	*	—	—	*	*	—
1A	—	*	—	*	*	—
1b	*	*	—	*	*	—
1C	—	—	*	*	*	—
1d	*	—	*	*	*	—
1E	—	*	*	*	*	—
1_	*	*	*	*	*	—
20	—	—	—	—	—	*

Notes

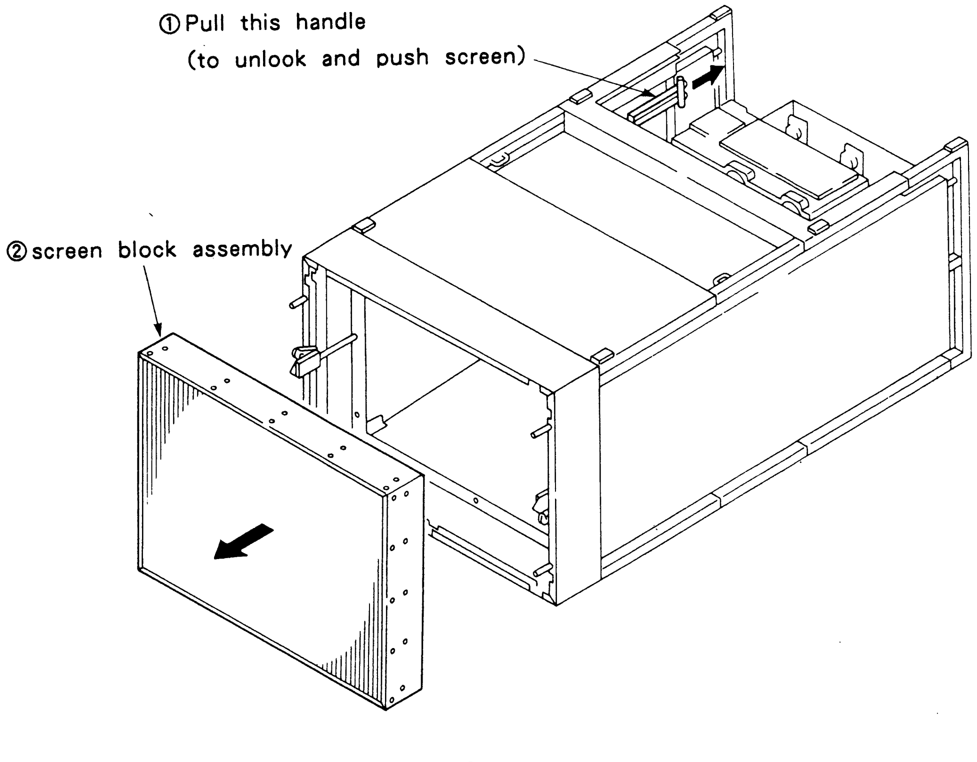
- When the error code lights up, all the previous adjustment data will be cleared.
- The error code will disappear when the MAIN POWER switch is turned off and the power cord is pulled out.
- The error code will light up every time the power is turned on unless the operational error is recovered to normal.

SECTION 2
DISASSEMBLY

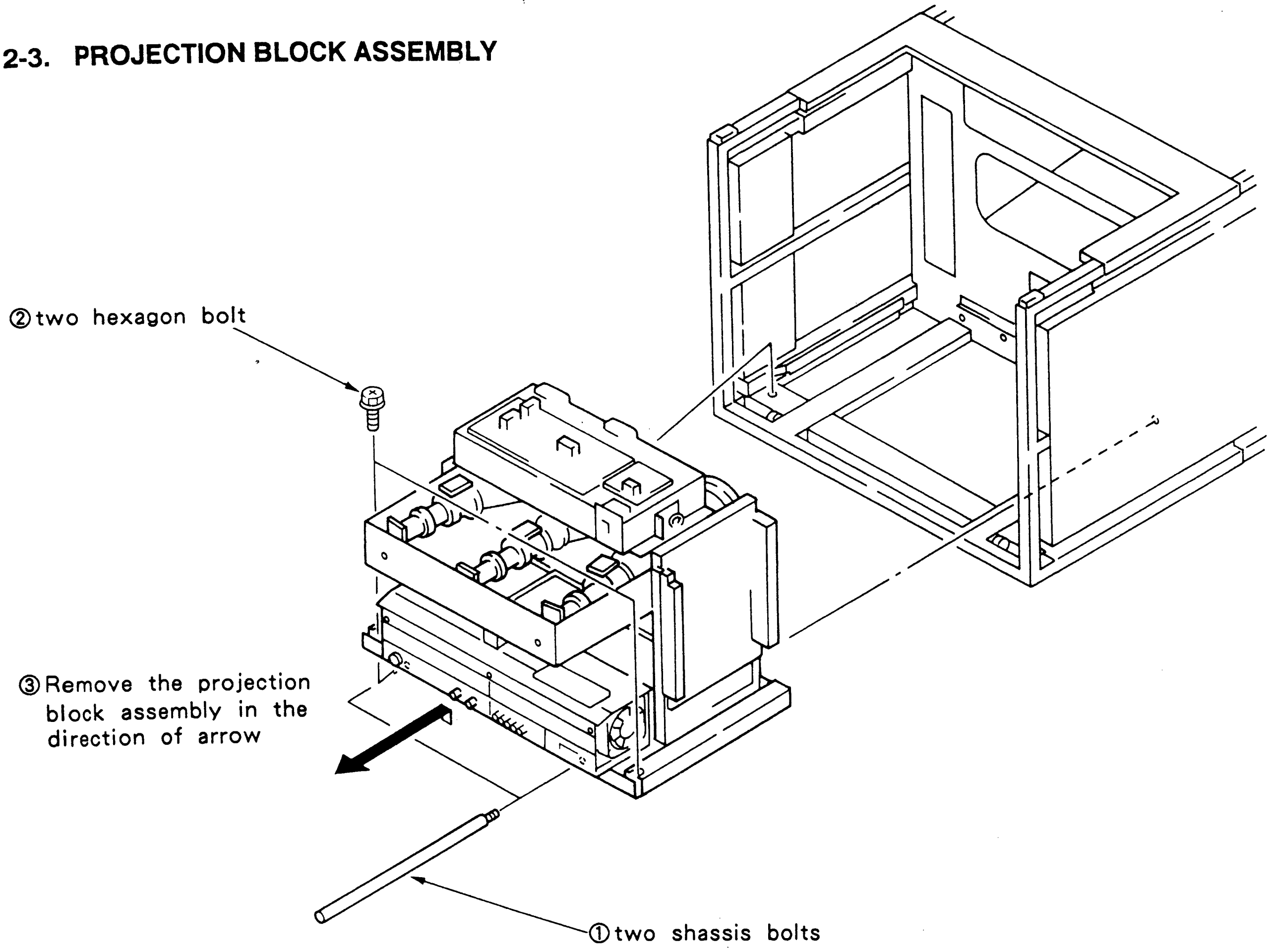
2-1. REAR COVER REMOVAL


⑧plate cover (RE)
⑦two terminal screws (M4 × 10)
⑨junction connecctor
⑤three terminal screws (M4 × 10)
⑥rear cover assembly
②three terminal screws (M4 × 10)
⑨junction connecctor
④two terminal screws (M4 × 10)
③cover (B) assembly
①three screws (+ PSW3 × 12)

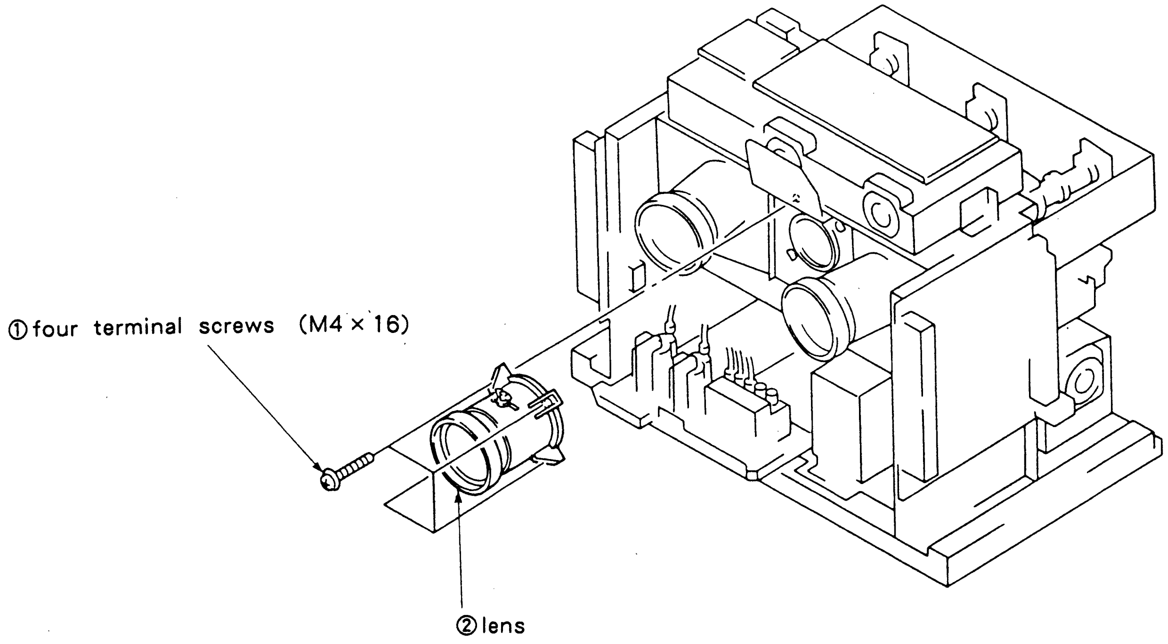
2-2. SCREEN BLOCK ASSEMBLY REMOVAL


①Pull this handle
(to unlook and push screen)
②screen block assembly

2-3. PROJECTION BLOCK ASSEMBLY

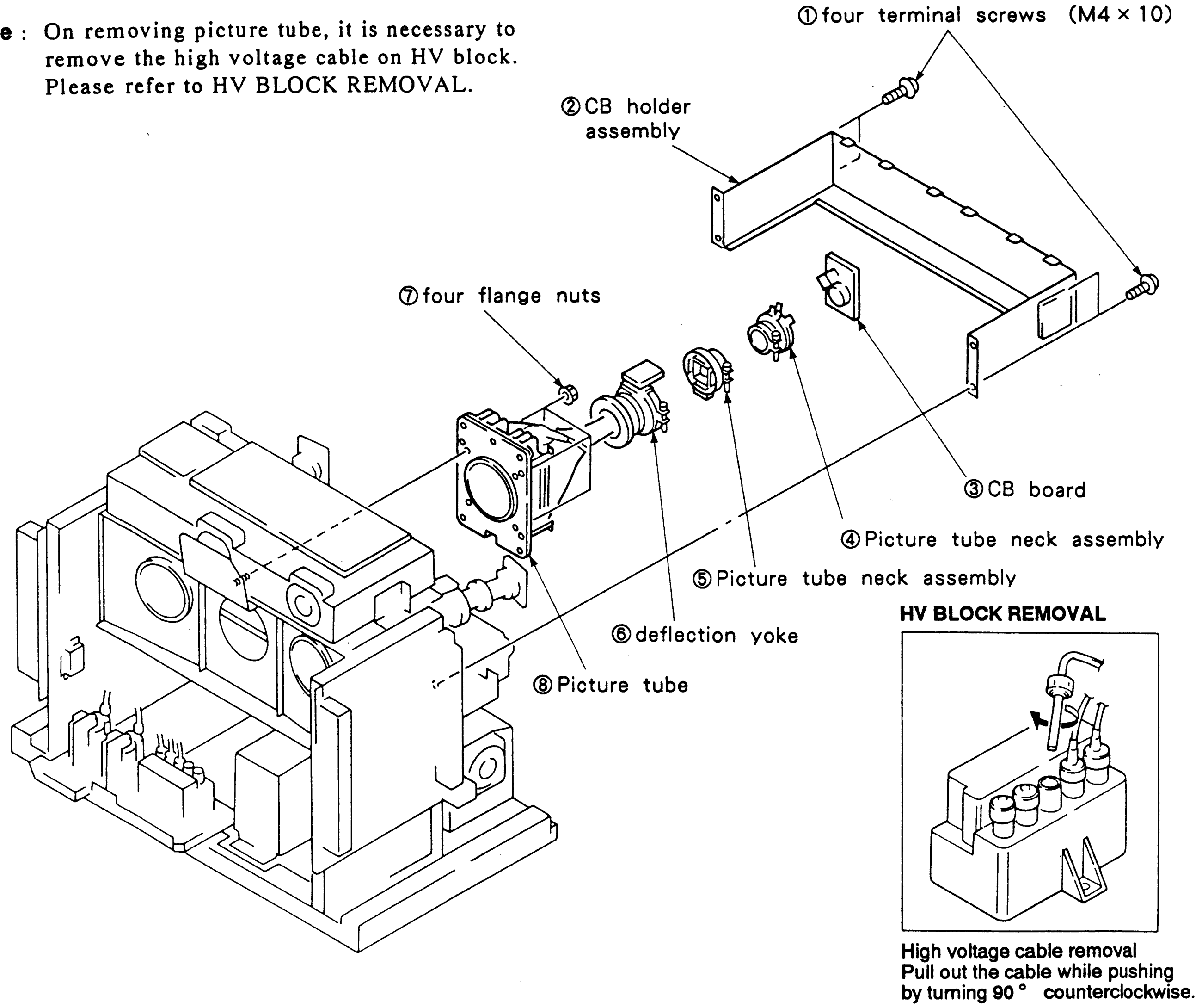

②two hexagon bolt
③Remove the projection block assembly in the direction of arrow
①two shassis bolts

2-4. LENS REMOVAL


①four terminal screws (M4 × 16)
②lens

2-5. PICTURE TUBE REMOVAL

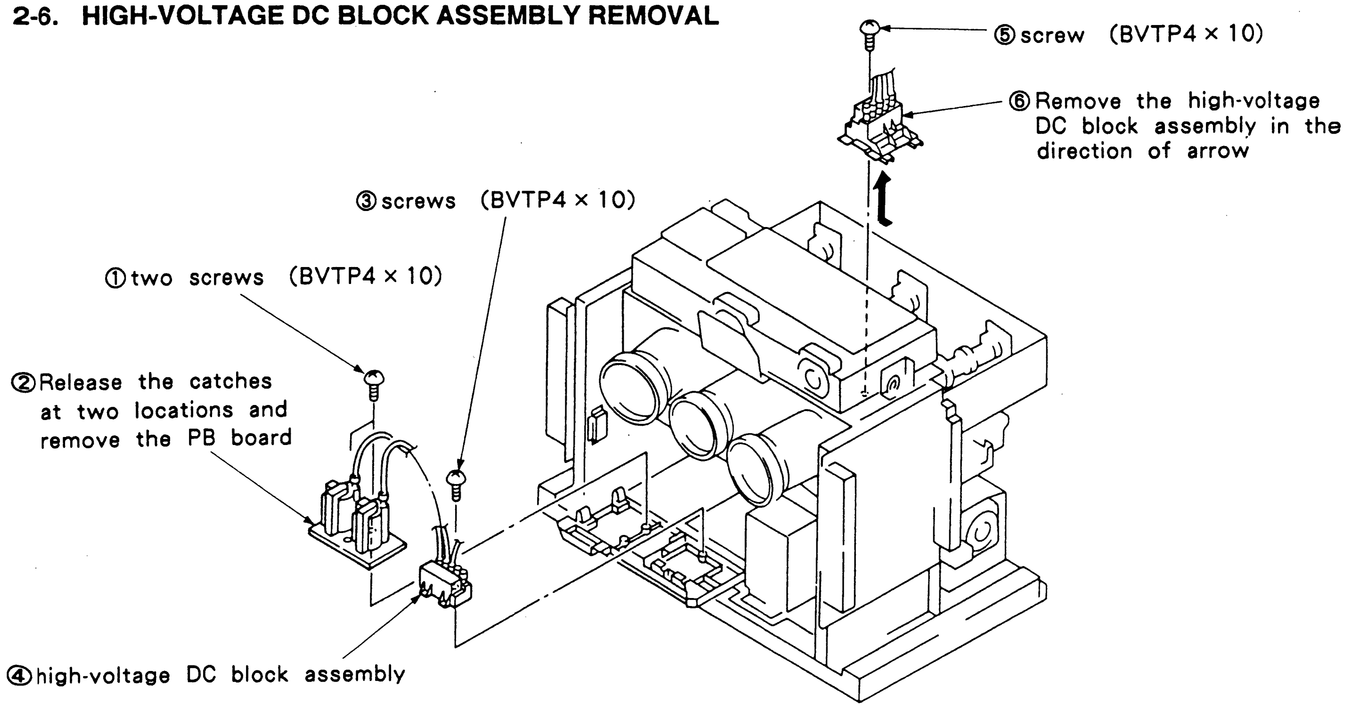
Note : On removing picture tube, it is necessary to remove the high voltage cable on HV block. Please refer to HV BLOCK REMOVAL.


①four terminal screws (M4 × 10)
②CB holder assembly
⑦four flange nuts
③CB board
④Picture tube neck assembly
⑤Picture tube neck assembly
⑥deflection yoke
⑧Picture tube

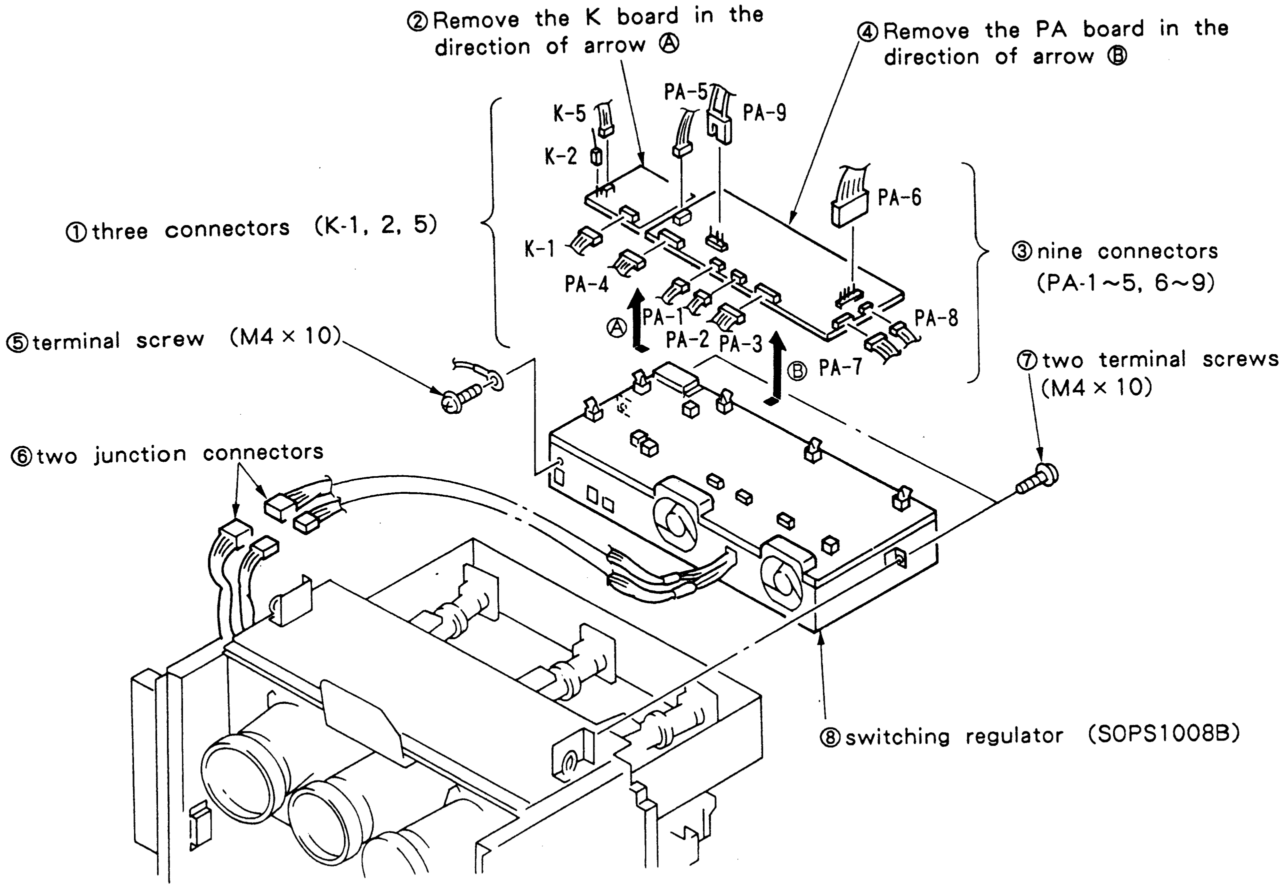
HV BLOCK REMOVAL

High voltage cable removal
Pull out the cable while pushing by turning 90 ° counterclockwise.

2-6. HIGH-VOLTAGE DC BLOCK ASSEMBLY REMOVAL


⑤screw (BVTP4 × 10)
⑥Remove the high-voltage DC block assembly in the direction of arrow
③screws (BVTP4 × 10)
①two screws (BVTP4 × 10)
②Release the catches at two locations and remove the PB board
④high-voltage DC block assembly

2-7. K BOARD, PA BOARD AND SWITCHING REGULATOR (SOPS1008B) REMOVAL



② Remove the K board in the direction of arrow Ⓐ

④ Remove the PA board in the direction of arrow Ⓑ

① three connectors (K-1, 2, 5)

③ nine connectors (PA-1~5, 6~9)

⑤ terminal screw (M4 × 10)

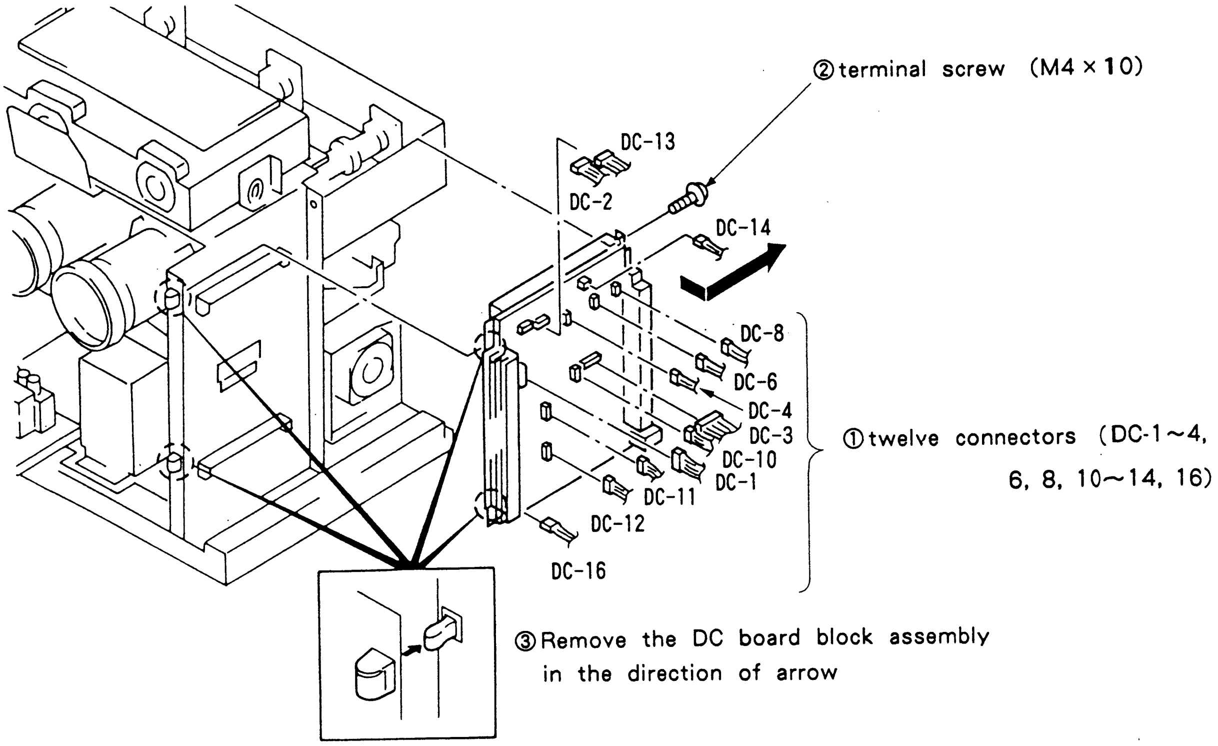
⑦ two terminal screws (M4 × 10)

⑥ two junction connectors

⑧ switching regulator (SOPS1008B)

K-5
K-2
K-1
PA-5
PA-9
PA-6
PA-4
PA-1
PA-2
PA-3
PA-7
PA-8
Ⓐ
Ⓑ

2-8. DC BOARD BLOCK ASSEMBLY REMOVAL



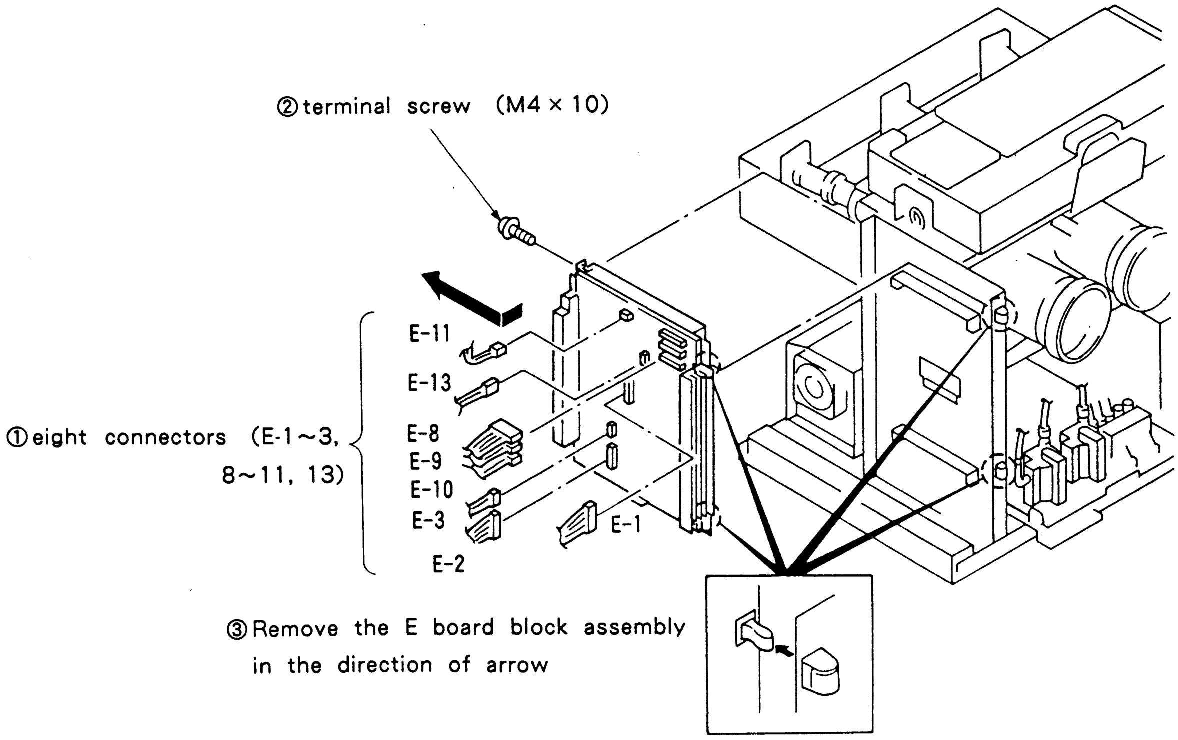
② terminal screw (M4 × 10)

① twelve connectors (DC-1~4, 6, 8, 10~14, 16)

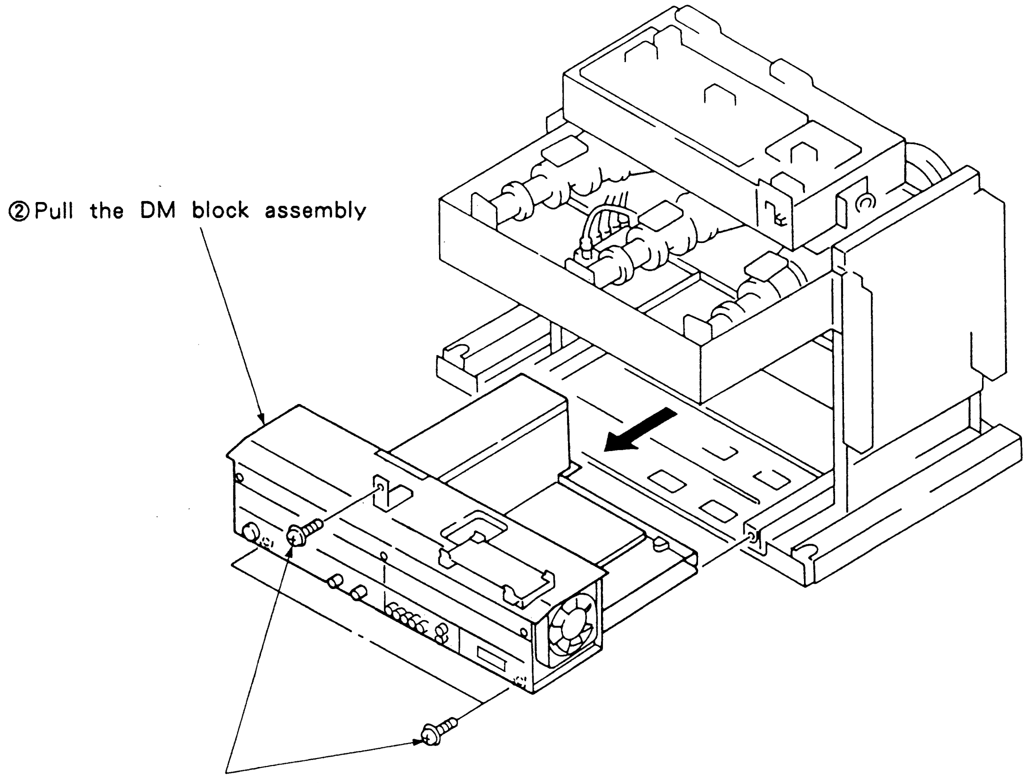
③ Remove the DC board block assembly in the direction of arrow

DC-13
DC-2
DC-14
DC-8
DC-6
DC-4
DC-3
DC-10
DC-1
DC-11
DC-12
DC-16

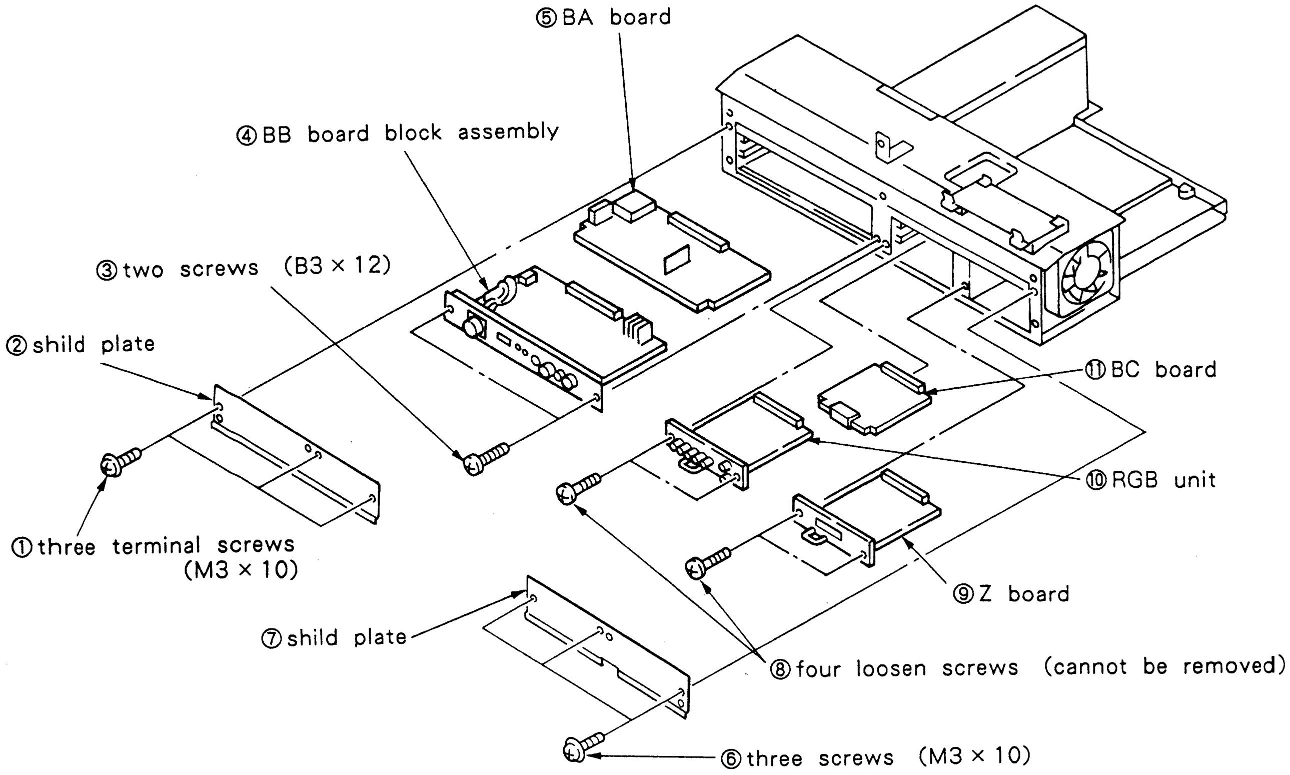
2-9. E BOARD BLOCK ASSEMBLY REMOVAL


②terminal screw (M4 × 10)
E-11
E-13
①eight connectors (E-1~3, 8~11, 13)
E-8
E-9
E-10
E-3
E-1
E-2
③Remove the E board block assembly in the direction of arrow

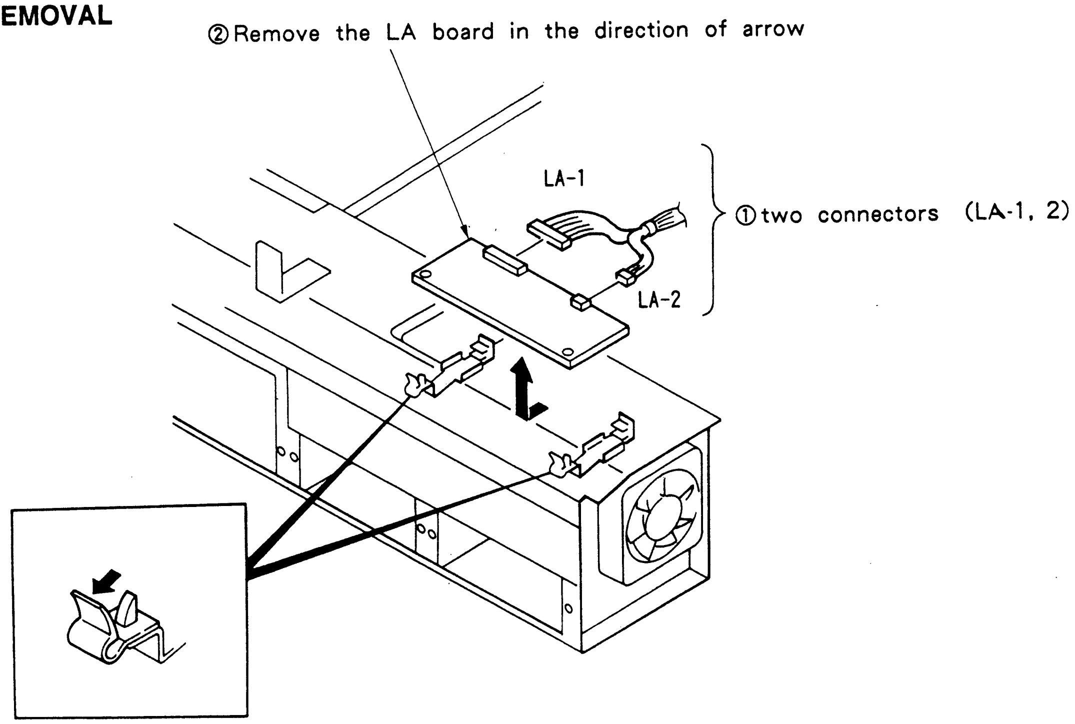
2-10. DM BLOCK ASSEMBLY REMOVAL


②Pull the DM block assembly
①three terminal screws (M4 × 10)

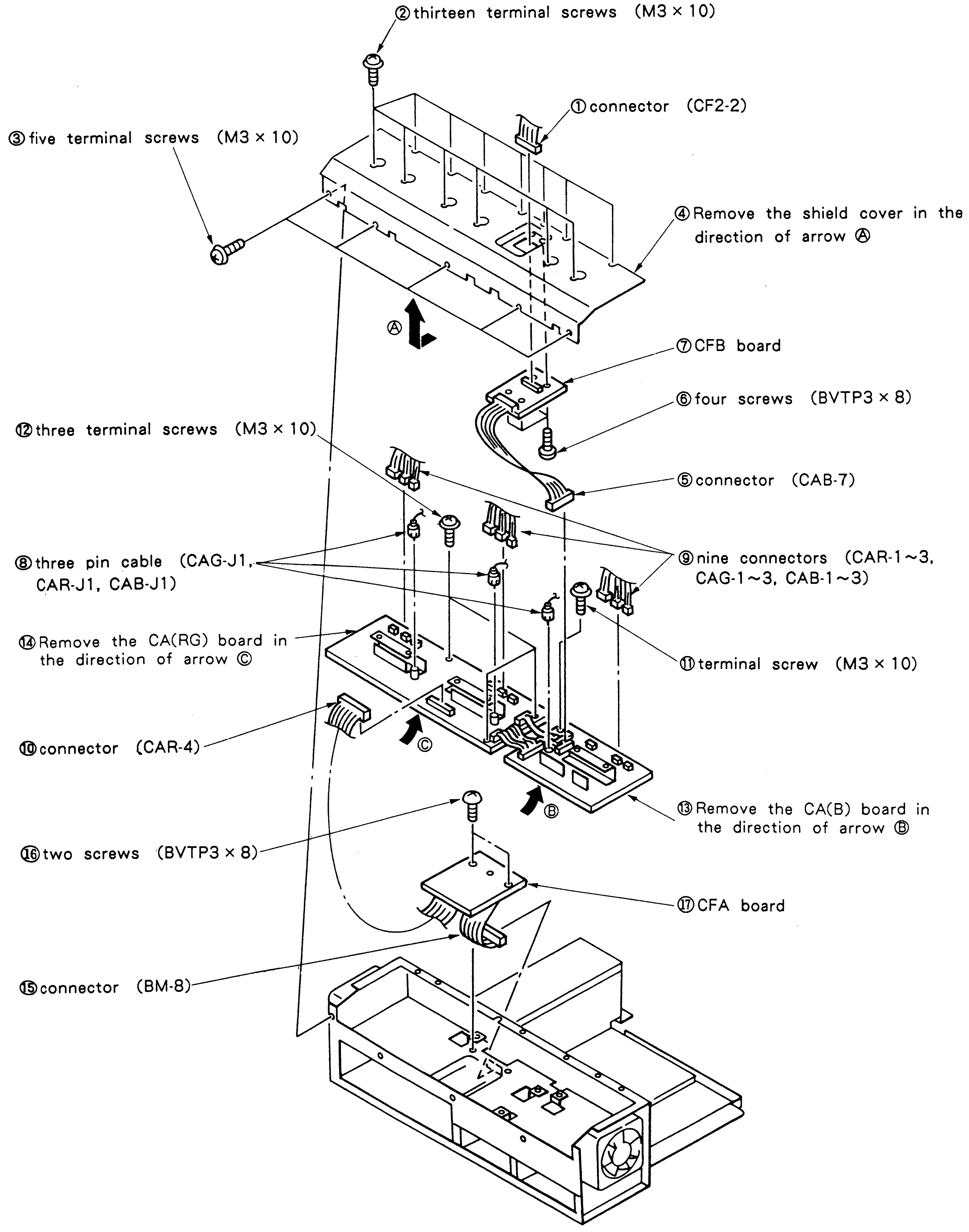
2-11. RGB UNIT, Z, BA, BB AND BC BOARDS REMOVAL


⑤BA board
④BB board block assembly
③two screws (B3 × 12)
②shild plate
①three terminal screws (M3 × 10)
⑦shild plate
⑪BC board
⑩RGB unit
⑨Z board
⑧four loosen screws (cannot be removed)
⑥three screws (M3 × 10)

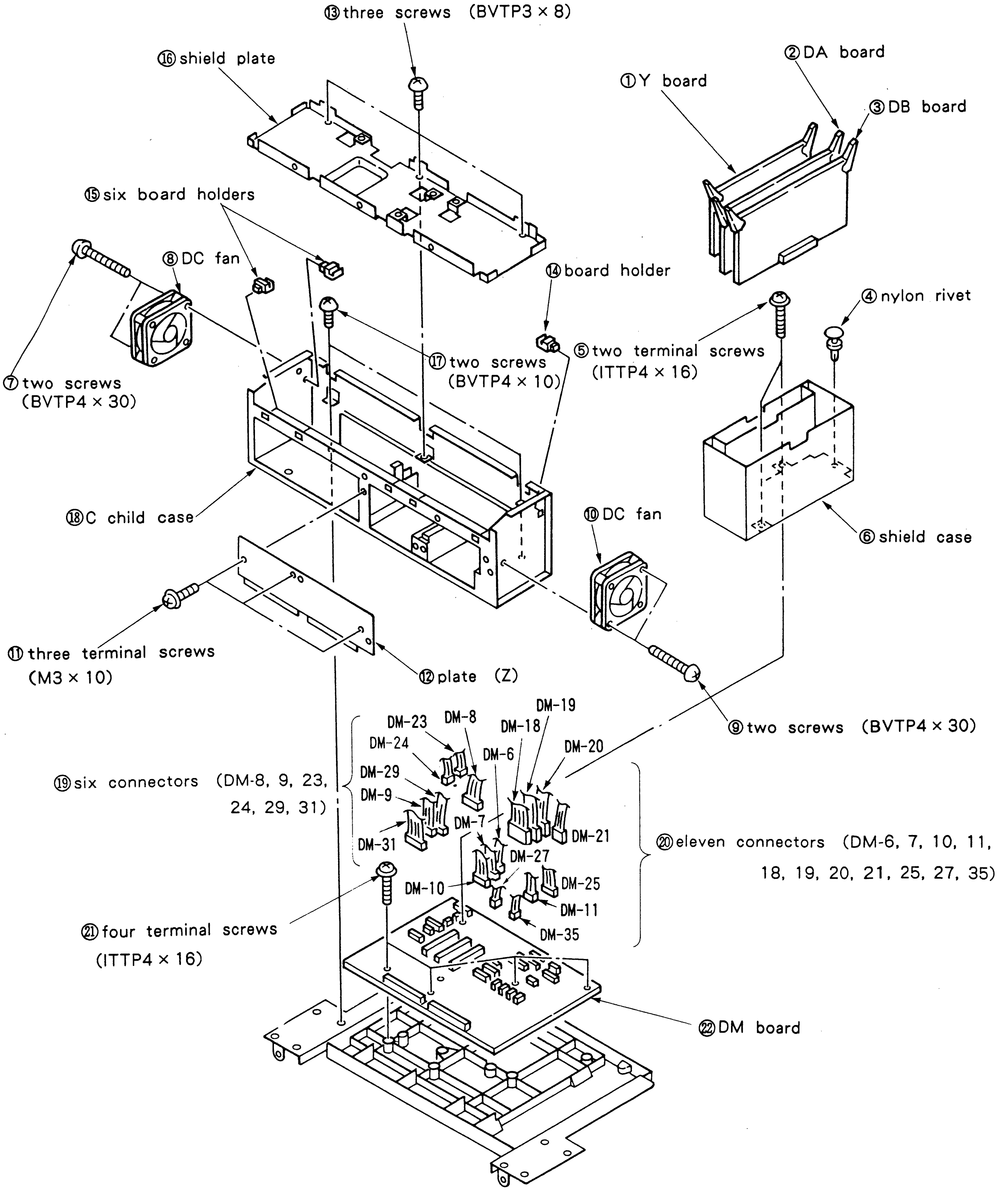
2-12. LA BOARD REMOVAL


②Remove the LA board in the direction of arrow
LA-1
LA-2
①two connectors (LA-1, 2)

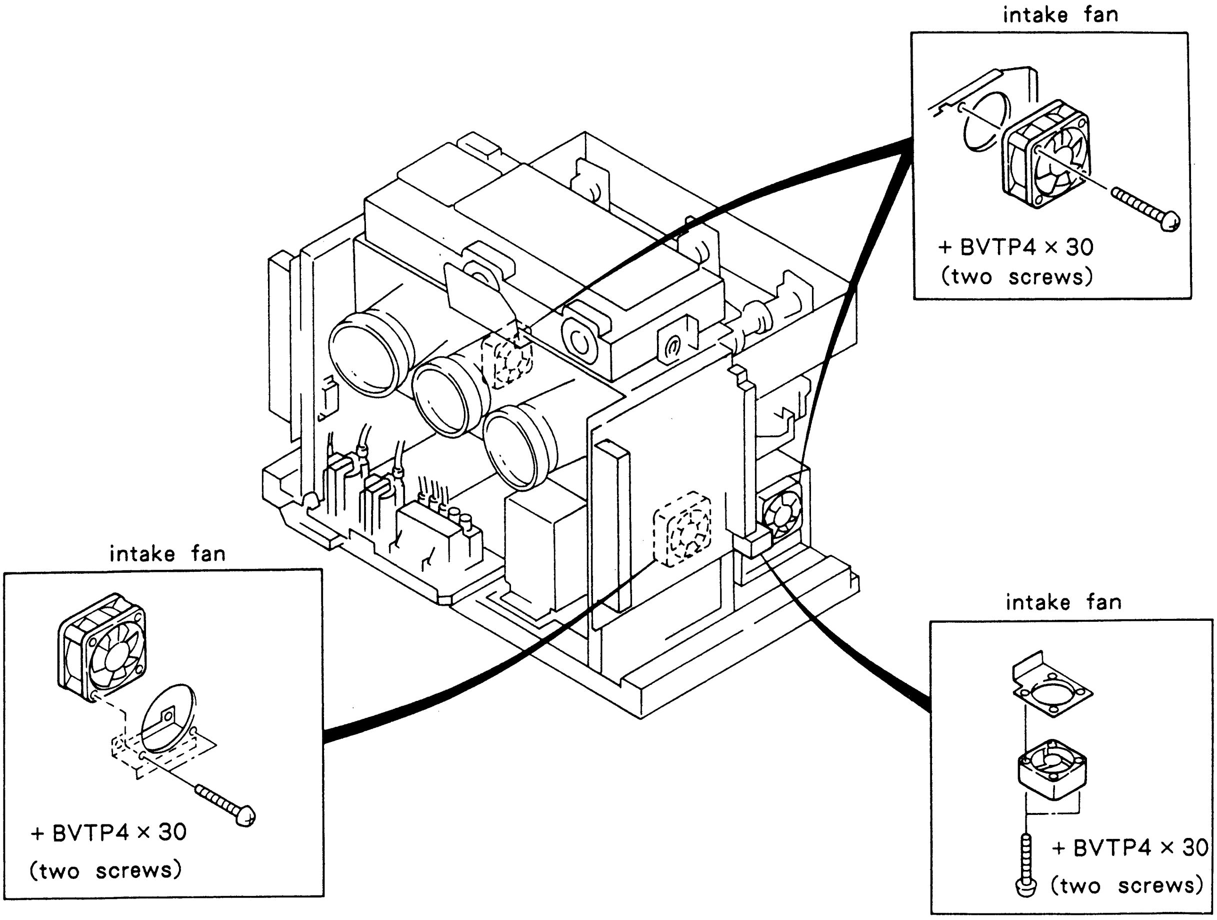
2-13. CFA, CFB, CA (RG), CA (B) BOARDS REMOVAL


② thirteen terminal screws (M3 × 10)
① connector (CF2-2)
③ five terminal screws (M3 × 10)
④ Remove the shield cover in the direction of arrow Ⓐ
Ⓐ
⑦ CFB board
⑥ four screws (BVTP3 × 8)
⑫ three terminal screws (M3 × 10)
⑤ connector (CAB-7)
⑧ three pin cable (CAG-J1, CAR-J1, CAB-J1)
⑨ nine connectors (CAR-1～3, CAG-1～3, CAB-1～3)
⑭ Remove the CA(RG) board in the direction of arrow Ⓒ
⑪ terminal screw (M3 × 10)
⑩ connector (CAR-4)
Ⓒ
Ⓑ
⑬ Remove the CA(B) board in the direction of arrow Ⓑ
⑯ two screws (BVTP3 × 8)
⑰ CFA board
⑮ connector (BM-8)

2-14. Y, DA, DB, DM BOARDS REMOVAL


⑬three screws (BVTP3 × 8)
②DA board
⑯shield plate
①Y board
③DB board
⑮six board holders
⑧DC fan
⑭board holder
④nylon rivet
⑤two terminal screws (ITTP4 × 16)
⑰two screws (BVTP4 × 10)
⑦two screws (BVTP4 × 30)
⑱C child case
⑩DC fan
⑥shield case
⑪three terminal screws (M3 × 10)
⑫plate (Z)
⑨two screws (BVTP4 × 30)
DM-23
DM-8
DM-19
DM-18
DM-24
DM-6
DM-20
⑲six connectors (DM-8, 9, 23, 24, 29, 31)
DM-29
DM-9
DM-7
DM-21
DM-31
DM-27
⑳eleven connectors (DM-6, 7, 10, 11, 18, 19, 20, 21, 25, 27, 35)
DM-10
DM-25
DM-11
DM-35
㉑four terminal screws (ITTP4 × 16)
㉒DM board

2-15. ATTACHMENT DIRECTION FOR THE DC FAN


intake fan
+ BVTP4 × 30
(two screws)
intake fan
+ BVTP4 × 30
(two screws)
intake fan
+ BVTP4 × 30
(two screws)

MEMO

SECTION 3 .
CIRCUIT DESCRIPTIONS

3-1. CIRCUIT OPERATION OF BA BOARD

3-1-1. Y-System

1. Trap circuit

After passing Q11, video signal enters to a trap circuit. A Trap circuit eliminates chroma component from video signal. This projector model is equipped with 3 trap circuits, and switches/enables one of them because video signals of 3 different color TV system, i.e., PAL, SECAM, NTSC3.58, and NTSC 4.43, may enter to this projector model (sub-carrier frequency is same both in PAL and NTSC4.43).

[Circuit operation with PAL or NTSC3.58 system]

Video signal passes a low-pass filter FL4, an amplifier (Q30 and Q31), a clamp-circuit (Q18, Q32, D10, D11), then enters to pin ① of a comb-filter IC10. IC10 operates as a comb-filter for PAL system when pin ㉞ is held High, and for NTSC3.58 system when pin ㉞ is held Low, and outputs Y-signal from pin ⑬.

Y-signal thus output from the comb-filter enters to pin 17 of IC3. IC3 gives a time-delay to Y-signal, then output it from pin ⑪. The delayed Y-signal passes an amplifier (Q118, Q119, Q120) then enters to pin ① of IC6. IC6 is the switching IC for Y-signal, and selects one from NTSC3.58/PAL, SECAM/NTSC4.43/YC, and B/W.

[Circuit operation with SECAM, NTSC4.43, or Y/C]

Video signal enters to pin ② of BPF1. BPF1 is the trap for NTSC4.43, and BPF2 is the trap for SECAM. Control to traps is done through pins ④ and ⑤ of BPF1, and traps are enabled with High state of corresponding pins.

In SECAM operation, both pins ④ and ⑤ of BPF1 are put to High to eliminate chroma components around 4.43MHz and around 4.25MHz, and Y-signal is output from pin ⑤ of BPF2.

In NTSC4.43 operation, pin ④ is put to High and pin ⑤ is put to Low to eliminate chroma components around 4.43MHz. In YC operation, both pins ④ and ⑤ are put to Low and video signal passes through traps, then is output from pin ⑤ of BPF2.

Y-signal, output from pin ⑤ of BPF2, passes a delay-line DL102 then enters to pin ③ of IC6.

[Operation with B/W signal]

B/W signal, output from Q11, passes Q52 and enters to pin ⑥ of IC6.

2. IC6 (CX-894)

This is the IC which selects one of inputs from NTSC3.58/PAL, SECAM/NTSC4.43/YC, B/W. Pin ⑧ is the signal output terminal, and pins ② and ⑥ are control terminals. Table below shows IC's operating modes and control pins' status.

operating mode	pin ②	pin ⑥
NTSC3.58/PAL	H	L
SECAM/NTSC4.43/YC	L	H
B/W	L	L

Table. 1-1.

3. IC7 (HD14053)

Y signal from pin ⑧ of IC6 enters to pin ⑫ of IC7, and Y signal in color-difference signal mode enters to pin ⑬ of IC7, respectively. Output signal switching is done using pins ⑨, ⑩ and ⑪. Input signal to pin ⑫ is output from pin ⑭ when pins ⑨, ⑩ and ⑪ are put to Low, and input signal to pin ⑬ is output from pin ⑭ when these control pins are put to High.

4. IC12 (sharpness IC)

Y signal, output from pin ⑭ of IC7, enters to pin ② of IC12, a sharpness control IC. Y-signal is given high-peaking at about 3.6MHz in VIDEO mode, and at about 6.6MHz in IDTV mode. Y-signal is output from pin ⑩ of IC12. Sharpness control terminal is pin ⑧, and the control voltage is in −2.5V to +2.5V range. Y signal, output from pin ⑩ of the IC, passes an amplifier (Q313, Q317, Q318) and enters to pin ⑦ of IC8 (CXA-1216P), a RGB matrix.

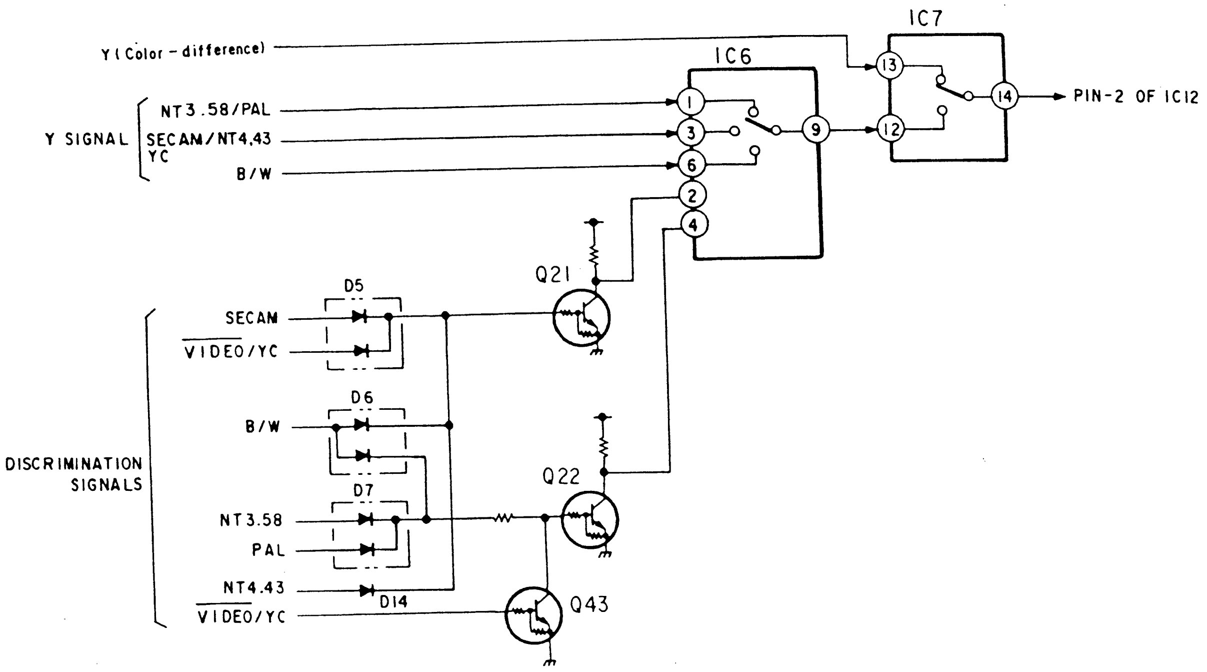

IC7
Y (Color - difference)
IC6
Y SIGNAL
NT3.58/PAL
SECAM/NT4.43
YC
B/W
1
3
6
2
4
9
13
12
14
PIN-2 OF IC12
Q21
D5
SECAM
VIDEO/YC
D6
B/W
DISCRIMINATION
SIGNALS
Q22
D7
NT3.58
PAL
NT4.43
D14
VIDEO/YC
Q43

Fig. 1-1.

3-1-2. CHROMA System

Chroma signal of NTSC3.58/PAL is output from pin ⑮ of a comb-filter (IC10). Then enters to pin ⑬ of IC1. In SECAM/NTSC4.43 or YC modes of operation, chroma signal enters to pin ⑫ or pin ① of IC1, respectively. Chroma signal is output from pin ⑮ of IC1, then passes band-pass filters as shown in Fig. 1-1.

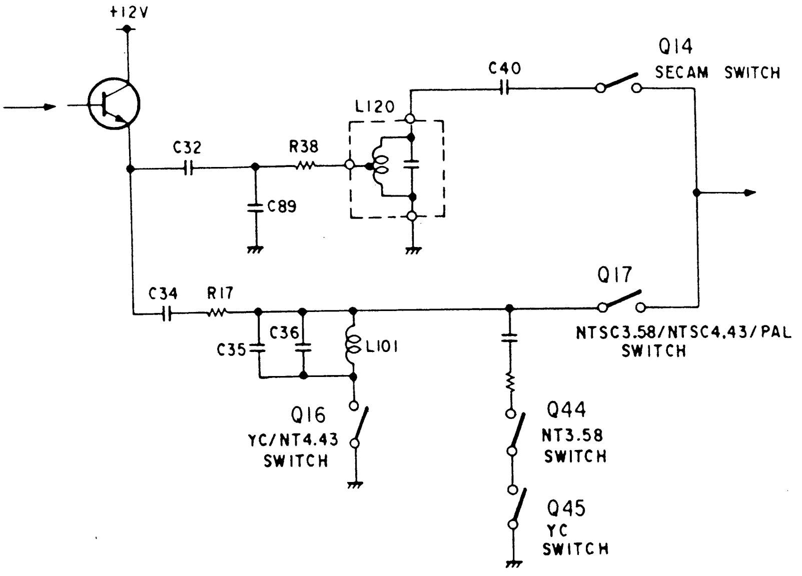

+12V
Q14
C40
SECAM SWITCH
L120
C32
R38
C89
Q17
C34
R17
C36
C35
L101
NTSC3.58/NTSC4.43/PAL
SWITCH
Q16
YC/NT4.43
SWITCH
Q44
NT3.58
SWITCH
Q45
YC
SWITCH

Fig. 1-2.

1. IC2 (TDA4555)

After passing corresponding BPFs, chroma signal enters to pin ⑮ of decoder IC (TDA4555). PAL or SECAM signal is output from pin ⑫, and it passes a delay-line to be delayed by 1H time, then enters to pin ⑩.

With its phase and level be adjusted by L105 and RV101, the signal is added to the signal entered from pin ⑮. The resultant signal is then decoded in the IC. R – Y signal is output from pin ①, and B – Y signal from pin ③.

ID circuit consists of following 3 circuits:

a. Phase discriminator to compare the phase of burst signal of PAL/NTSC system with the phase of internal reference signal
b. Frequency discriminator to provide H/2 signal in SECAM transmission an internal phase discriminator and an external phase discriminator connected to pin 22 (SECAM•ID reference circuit)
c. H/2 detector circuit for PAL/SECAM system and a logic circuit for true ID

2. HUE COL CONTROL

HUE COL CONTROL voltage is in -2.5V to 2.5V range, and is converted to 2V to 7V range in an operational amplifier (IC13), then sent to IC003 (CXA1216P) as the control voltage to it. 3 potentiometers, i.e., SUB HUE (RV105, used in NTSC system), HUE ADJ (RV103), and SUB COL (RV104) are used to compensate variation in ICs and/or resistors.

3. SUB PICTURE•SUB BRIGHT

Pin ㉗ of IC8 (CXA-1216P) is PICTURE control terminal, and pin ㉘ is BRIGHT control terminal. RV102 (SUB PIC) is used to adjust PICTURE level. Output voltage from IC9's pin ① controls SUB-BRIGHT to maintain BRIGHT level constant.

3-1-3. IC15 (H8B7178B)

IC15 performs (1) SYNC separation, and (2) Sandcastle Pulse (S.C.P.) output. Y-signal, output from pin ⑭ of IC7, passes an amplifier (Q336, Q337, Q338), a clamper (D201), a limiter (D303, D304), then enters to pin ③ of IC15. IC15's pin ① outputs S.C.P., pin ⑧ outputs V. Sync, and pin ⑪ outputs H. Sync, respectively.

S.C.P. enters to pin ㉔ of IC2 (TDA4555). Phase relationship between chroma signal (input to pin ⑮) and S.C.P. is as shown in Fig. 1-3.

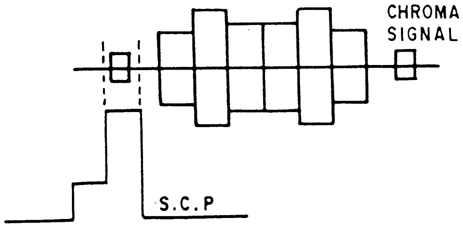


Fig. 1-3.

3-1-4. IC11 (CX-7916)

CX-7916 is an IC to discriminate 50Hz or 60Hz with H. SYNC is applied to pin ①, and V. SYNC to pin ⑤. The IC's operation is as shown in table below:

input signal	pin ②	pin ③
50Hz (PAL, SECAM)	L	H
60Hz (NTSC 3.58/4.43)	H	L

Table. 1-2.

3-1-5. B/W Discrimination

If color signal enters, one of pins㉕ to㉘ of IC2 is held HIGH.

This causes Q23 be turned ON, and its collector be held LOW.

Q23 does not turn ON in case of B/W signal, and its collector is held HIGH.

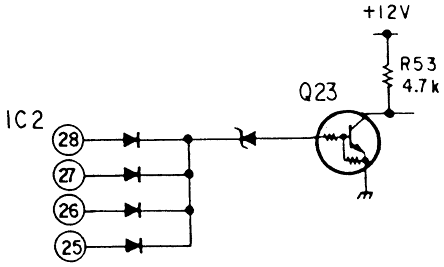


Fig. 1-4.

3-1-6. IC8 (CXA-1216P)

IC8 (CXA-1216P) is a R.G.B matrix IC. Its pin ⑦ is Y input terminal, pin ⑥ is B – Y input, pin ⑤ is R – Y input. BLK pulse enters to pin ①, and B/P. CLAMP pulse to pin ③. R, G, and B signals are output from pins ⑮, ⑰, and ⑲, respectively.

Pin ⑪ is AUTO PEDESTAL terminal, and Dynamic Pic. function is enabled when SW1 is in OPEN status.

3-1-7. IC5 (NJM2228)

IC5 generates the clock signal to be applied to pin ⑧ of comb-filter IC10.

With NTSC 3.48/PAL signal input, X101/X102 starts to oscillate. The clock signal thus generated passes Q202 and Q203, then enters to pin ① of IC5. From pin ④ of IC5, a clock signal with doubled frequency of input signal is output. It passes an amplifier (Q205, Q206, Q207), then enters to pin ⑧ of IC10.

3-1-8. IC14 (SN74LS12NS)

IC14 is a switch for IDTV discrimination. Output terminal (pin ⑫) is held HIGH during IDTV MODE or RGB MODE, and is held LOW during VIDEO MODE. This terminal controls both IC12's pin④ (control terminal of sharpness IC) and BA~1 connector's 22a (VIDEO/$\overline{\text{IDTV}}$).

Discrimination signals to be applied to IC14 are as shown below:

VIDEO/$\overline{\text{YC}}$
- with Composite Video input : H
- with YC input: L

RGB/$\overline{\text{Video}}$
- with video input: L
- with RGB input: H

Code 3
- with composite video, Y/C input: H
- with color difference inputs: L

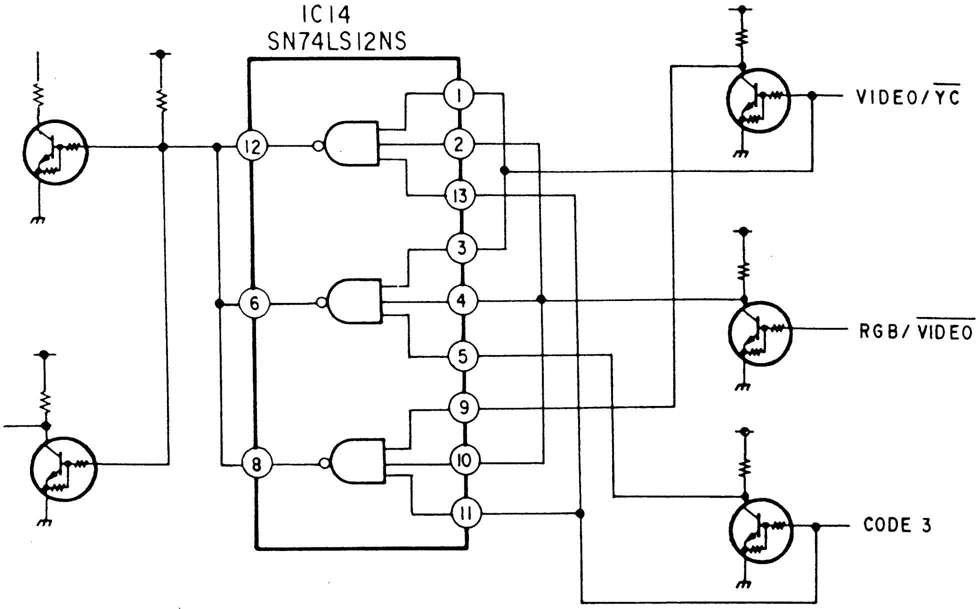

IC14
SN74LS12NS
1
2
3
4
5
6
8
9
10
11
12
13
VIDEO/$\overline{\text{YC}}$
RGB/ $\overline{\text{VIDEO}}$
CODE 3

Fig. 1-5.

3-2. CIRCUIT OPERATION OF BB BOARD

3-2-1. Signal Switching Circuit

IC404, 405, 407 and the circuit around these ICs forms a signal switching circuit. It selects a video signal from (1) R.G.B. signal, (2) VIDEO signal, (3) Y/C signal, (4) color difference signal (these 4 signals enter from SLOT A, SLOT B and a switcher), and (5) VIDEO signal, (6) Y/C signal (these 2 signals enter from the panel of BB board).

1. Operation with R.G.B. Inputs (video section)

R.G.B. signals, entered to SLOT A or SLOT B, pass through BM board, then are applied to pins ⑧ of RL401, 402, 403 via pins 7a, 9a, 11a of BP-1 connector.

On the other hand, signals (entered from the switcher to BP-2 connector's pins ⑬, ⑪, ⑨ via a CCQ connector) enter to pins ⑭ of RL401, 402, 403.

Control to pin ① of each relay (RL) is done as shown in the table 2-1, and one of these two signals is output from pin ⑪. This signal is applied to transistors Q654, 710, and 757.

pin ① of RL	signal output from pin ⑪
H	pin ⑭ (CCQ)
L	pin ⑧ (SLOT A, B)

Table 2-1

Red signal passes Q651 and 653, then its pedestal level is clamped in a clamping circuit (Q650, IC410) as in case of pin ⑤ of IC410. The signal thus clamped passes a buffer (Q653), a switch (IC414) and an amplifier (IC418), then is output from pin 17b of connector BB-1.

Blue signal also passes similar circuits, and is output from pin 19b of connector BB-1.

Green signal passes "Clear Blue Circuit (see section 3-2-5)", circuits similar to Red or Blue signal, then is output from pin 18c of connector BB-1.

2. Operation with VIDEO Input (video section)

The signal, entered from VIDEO IN (panel of BB board) of the projector model, passes a resistor (R539) and a buffer (Q509), then enters to pin ⑫ of IC404.

Y-signal, entered from Y/C IN (panel of BB board), passes a buffer (Q516) then enters to pin ② of IC404. C signal passes a buffer (Q517) then enters to pin ⑤ of IC404.

Video signal, Y/C signal, and color difference signal (which enter to SLOT A and SLOT B) passes through R.G.B. signal lines via pins 7a, 9a, 11a of connector BB-1. Video signal, Y/C signal, and color difference signal (which enter to swicher) also enter to pins ⑬, ⑪ and ⑨ of connector BB-2, then enters to pins ⑭ of RL401, 402, 403. These signals are switched in accordance with the operating modes shown in the table 2-1, and is output from pin ⑪. The signals thus output pass Q506, Q507 and Q508 respectively, then enter to pins ⑬, ① and ⑬ of IC404.

IC404 selects its output signals from the signals described above and the signals entered from the panel of BB board. Thus, its pins ⑭, ⑮ and ④ output VIDEO, Y, C or R-Y, Y, R-Y, and these signals are sent to BA board via pins 5c, 4b, 5b of connector BB-1.

Table 2-2 shows the operating modes of IC404's control terminals:

V IN SEL (pin 23a of BB-1)	pins ⑨, ⑩, ⑪ of IC404	IC404's outputs (pins ⑭, ⑮, ④)
H	L	pins ⑫, ②, ⑤ (PJ main unit)
L	H	pins ⑬, ①, ③ (others)

Table 2-2

Signals, sent to BA board, are decoded and are applied to pins 8c, 9c, and 10c of BB-1 connector as R.G.B. signals. After that, each signal enters to pins ② of IC414, 415, 416, and passes through internal switching circuit, then is output from pins ⑪ of ICs. These signals pass circuits similar to in cases of R.G.B. input signals, then are output from pins 17b, 18c, 19b of connector BB-1.

3-2-2. SYNC Section

1. Operation with external SYNC

HD and VD, applied to SLOT A and SLOT B, enter to pins 1a and 2a of connector BB-1, then enter to pins ⑭ and ⑪ of IC405.

On the other hand, signals entered to switcher are applied to pins ⑦ and ⑥ of connector BB-2. After that, HD is terminated into a resistor (R501), and its peak is clamped to 0.7V by a diode (D501), then switched by transistors Q501, 502. Pulses with amplitude of 5Vp-p are output from collector of Q502, and enter to pin ⑬ of IC405.

VD also passes circuits similar to the ones in case of HD, and pulses output from the collector of Q504 enter to pin ⑩ of the IC. Operating mode of IC405 is controlled as shown in table 2-3, and signals are output from pins ⑫ and ⑨, then enter to pins ⑬ and ⑩ of IC407.

SLOT SEL (pin 23b of BB-1)	pin ① of IC405	outputs from IC405 (pins ⑫ and ⑨)
H	H	pins ⑬ and ⑩
L	L	pins ⑭ and ⑪

Table 2-3

In the case of VIDEO input, SYNC separation is done on BA board. HD is applied to pin 4a, and VD is applied to pin 5a of connector BB-1, then they enter to pins ⑭ and ⑪ of IC407, respectively. Operating mode of IC407 is controlled as shown in table 2-4, and signals output from pins ⑫ and ⑨ enter to 26c and 26a of connector BB-1.

pin ① of IC407	pins ⑫, ⑨, ⑦ of IC407
L	pins ⑭, ⑪, ⑤
H	pins ⑬, ⑩, ⑥

Table 2-4

2. Operation with SYNC on green

RL402 selects a signal from (1) GREEN signal entered from SLOT A and SLOT B, and (2) GREEN signal entered from switcher, as described in section 3-2-1 "Signal Switching Circuit". The signal thus selected is applied to pin ⑦ of IC401, then is output from pin ④.

The output signal passes through C762 and enter to IC417. It is output from pin ⑦ in negative polarity, and is MIXed with the pulses output from pin ⑫, then enters to pin ⑥ of IC407. Also, H SYNC enters to pin ⑤ of the IC in Video input mode. The signal switched in accordance with modes shown in table 2-4 is output from pin ⑦, then sent to Y board via pin 25c of connector BB-1. Pin ⑨ is held to H level if input signal is 3-value SYNC.

3-2-3. AUDIO Section

A signal (R, L MIX signal), connected to switcher, enters to pins ② of IC408, 409 via pin ① of connector BB-2.

Also, R, L signals entered to SLOT A and SLOT B pass through pins 13a and 14a of connector BB-1, then MIXed by Q525, 526, 527, 532, 533, and enter to pins ⑫ of IC408, 409.

Operating modes of IC408 and 409 are controlled as shown in Fig. 2-1, and they output signals from pin ⑭.

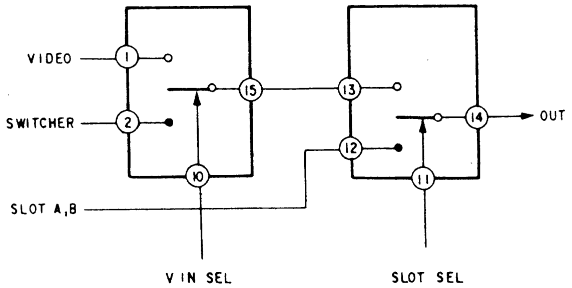


Fig. 2-1.

R, L signals thus switched enter to pins ⑥ and ④ of IC412, and are attenuated in accordance with the voltage applied to pins ② and ⑧ (VOL CONT terminals). R, L signals are output from pins⑦ and③, then sent to KA board via pins 3c and 3b of connector BB-1.

3-2-4. SIRCS Signal Circuit

The signal received by opto-receiver of the projector enters to pin 1c of connector BB-1, and the signal sent from the commander supplied with the main unit enters to pin 1b of connector BB-1, and the signal from the switcher enters to pin ③ of connector BB-2, respectively. The signal received by opto-receiver passes Q450, 451, a switch built in SIRCS IN terminal, then D450 and Q454, and is sent to pin 23c of connector BB-1. The signal is also sent to SIRCS OUT terminal via Q456. The signal sent from the commander supplied with the main unit enters to D450.

The signal from the switcher enters to Q453, then passes through the signal path described above.

The switch built in SIRCS IN terminal is turned OFF when a plug is inserted to SIRCS IN, and is turned ON when the plug is pulled out from SIRCS IN. Thus, wireless input of the main unit (signal from opto-receiver) is disabled when a plug is inserted, and the wired-input signal inserted to the terminal enters to D450 in return.

3-2-5. CLEAR BLUE Circuit

Red signal clamped by Q650 and IC410 appears on Q651's collector in an inverted waveform, and enters to Q652. Green signal enters to Q703 in a similar manner. Emitters of Q652 and Q703 are connected in common, and only the signal from transistor with lower base voltage (i.e., the signal with higher video level) appears on this point. The signal passes R708, 717, then enters to bases of Q704 (1/2) and Q707 (2/2). On the other hand, Blue signal appears on collector of Q751 in an inverted waveform, and enters to Q752. The signal passes R711, 714, then enters to bases of Q704 (2/2) and Q707 (1/2).

DC level of R, G signal is determined by the voltage supplied from Q753 (base voltage - V_{BE} determined by R760, 761, 762) at the time of polarity inversion, and DC level of B signal is determined by the voltage supplied from Q754.

Also, emitter of Q704 is connected to collector of Q705, and G signal's current flows in accordance with G signal applied to the base of Q705. Emitter of Q707 is connected to collector of Q709, and B signal's current flows in accordance with B signal applied to the base of Q709.

If C.B. SW (Clear Blue Switch) is turned OFF, then Q756 is turned ON. This causes the base voltage of Q704 (1/2) & Q707 (2/2) be held "Low", consquently Q704 (1/2) & Q707 (2/2) be turned OFF, and Q704 (2/2) & Q707 (1/2) be turned ON. Also, inverted waveform of G signal appears on collector of Q704 (2/2). The signal is inverted again in Q708, and enters to pin ④ of IC415.

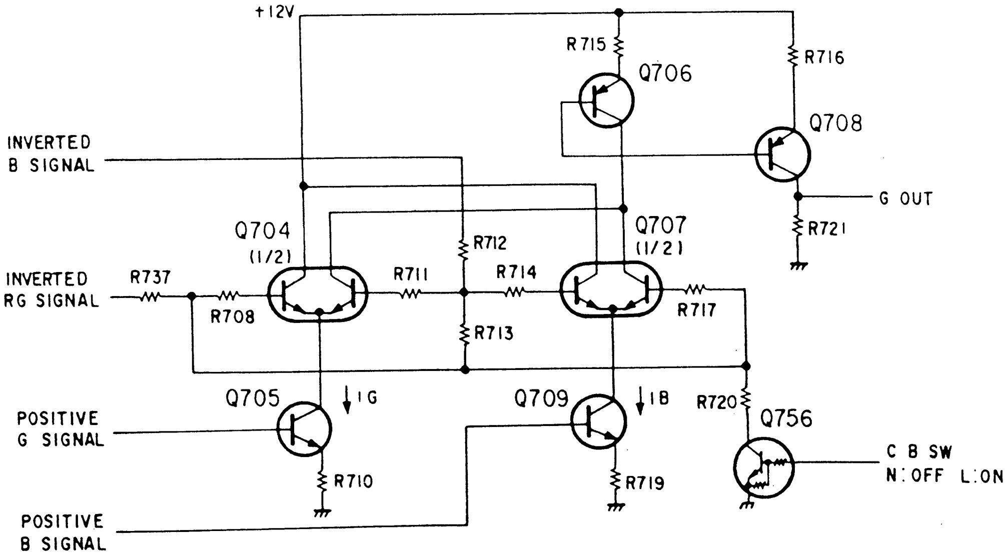


Fig. 2-2.

If C.B. SW is turned ON, the circuit compares base voltage of Q704 (1/2) & Q707 (2/2) to that of Q704 (2/2) & Q707 (1/2) to turn the transistor with higher base voltage ON. As the result, Q707 (2/2) & Q704 (1/2) are turned ON if B signal's level is higher than that of R, G signal, and MIXed signal of G and B signals enters to the base of Q708.

If B signal's level is lower than that of R, G signal, Q707 (1/2) & Q707 (2/2) are turned ON, and only G signal is applied to the base of Q708.

Thus, Clear Blue operation is to add G signal to B signal to cause Blue color be turned into Cyan color.

3-2-6. TEST SIGNAL Generator

Following test signals enter from connector BB-1 and are applied to IC413:

Test Signal	Pins of Connector BB-1	Pins of IC413
SG signal (test signals such as HATCH, DOT, etc.)	28a, 28b	12, 8
C.BRT signal (applies highlight and shade to picture in ZONE mode)	28c, 29c	7, 6
BOARDER signal (shadow portion of character signal)	29a, 29b	3, 2
PLUGE signal	27a, 27b	14, 13

Table. 2-5.

IC413 generates TEST signals based on input signals said above, and outputs them from pins ⑤ and ⑩. The test signal thus output enters to pins ⑦ and ⑧ of IC414, 415, 416, and is switched by NOR/TEST and VIDEO/RGB signals applied to pins ⑤ and ⑥ of these ICs, then is output from pin ⑪ of ICs. Also, RGB character signals entered from pins 30A, 30B, 30C, 31C, 31A, 31B of connector BB-1 are applied to pins ⑨ and ⑩ of IC414, 415, 416, and are output after superimposed on RGB, VIDEO, and TEST signals applied to pins ②, ④, ⑦, ⑧ of ICs.

3-2-7. CODE Generator

Codes are generated by IC422, 423, 424, and transistors, diodes located around these ICs. Relationship between input and output signals is as shown in a table below:

signal applied to PJ			VIDEO	Y/C	col. dif.	col. dif. IDTV	col. dif. IDTV	RGB 2-V*	RGB 3-V*	HD 2-V*	HD 3-V*
BB IN	RGB/VIDEO	BB-1 3A BB-2 pin ⑤	L	L	M	M	M	H	H	H	H
	VIDEO/YC	BB-1 2B BB-2 pin ④	H	L	H	L	M	–	–	–	–
	HDVS SEL	BB-1 22A	H	H	H	H	H	H	H	L	L
BB OUT	VIDEO/YC	BB-1 25B	H	L	H	L	L	–	–	–	–
	RGB/VIDEO	BB-1 25A	L	L	L	L	L	H	H	H	H
	TRI/NOT	BB-1 24C	–	–	–	L	H	L	H	L	H
	CODE 3	BB-1 26B	H	H	L	L	L	H	H	L	L

*: 2V → 2-valuses, 3V → 3-values

– : don't care

Table. 2-6.

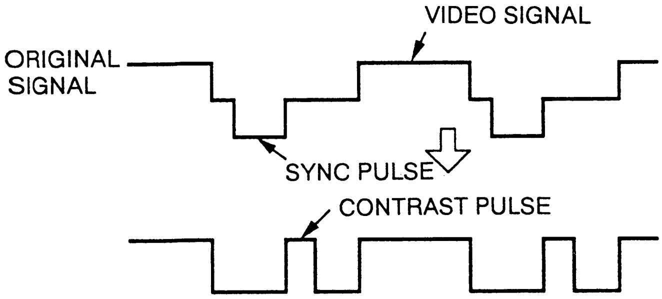
3-3. CIRCUIT OPERATION OF CA (RG) AND CA (B) BOARDS

- **Structure**

The CA (RG) board consists of signal processors for RED and GREEN CH. (BKG, DRV, Contrast, and Brightness controls plus cut off SW, blanking system, and pedestal clamp), video output amplifier, final-stage clamp circuit, automatic background circuit, peak ABL, and single-tube ABL circuit. Note that a gamma correction circuit accompanies the RED CH. The CA (B) board includes these functions for the BLUE CH. : signal processing (same features as for CA (RG) board), gamma correction circuit, video output amplifier, final-stage clamp circuit, automatic background circuit ABL circuit, and G1 blanking circuit.

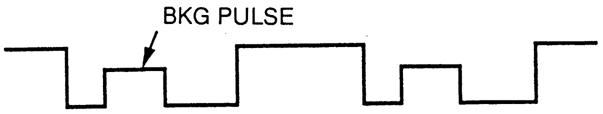
- **Signal processing**

BKG, DRV, Contrast, and Brightness control; cutoff SW; blanking and pedestal clamp signal processing are managed by IC104 (RED CH), IC204 (GREEN CH), and IC304 (BLUE CH). Signals input into pin ㉖ through AC merging are first clamped by a back port and a reference pulse (contrast pulse) for gain control (see diagram below) are inserted.

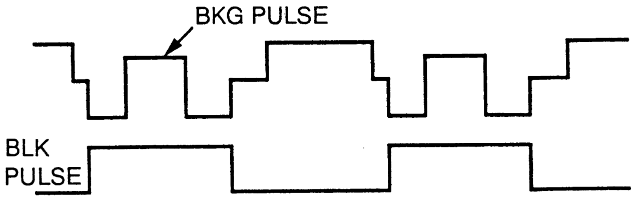


The pulses are then sent through a gain control amplifier (DC control) after which a feedback is applied so that the control pulse becomes as large as a certain reference value. This circuitry enables contrast to be controlled by simultaneously inserting various levels of control pulses while DRV can be controlled by changing the reference value against which the contrast pulse is compared. This circuit design brings about excellent inter-channel tracking performance.

When these processes are completed, instead of the contrast pulse, reference pulses for Brightness and Background control (BKG Pulse) are inserted. Brightness and Background control is carried out by changing the level of this BKG pulse.



As shown in the diagram below, with the exception of the BKG pulse section, blanking is applied by the blanking pulse input from pin ⑤ and the pulse is output from pin ③.



- **Video output amplifier**

This amplifier makes use of hybrid IC VPH05 (IC101, 201, 301) and is comprised of a cascode amplifier and a complimentary buffer. Note that a peaking terminal is provided in pin ③.

- **Final-stage clamp circuit**

This circuit uses a hybrid IC SNY-8C02 (IC103, 203, 303).
As the BKG pulse sector is clamped here, the pedestal level can be adjusted by changing the size of the BKG pulse.

- **Automatic background circuit (Only the RED CH is explained here, but the explanation is applicable to other CH as well.)**

The Ik that is detected by a cathode electric current detecting circuit (comprised of Q104, 105, 106, 107, 112) is converted to voltage and is sent through the voltage follower of IC102 (2/2). The voltage is then S/H'd by Q111 and C119 and the clamp voltage is modified by the previously-mentioned final-stage clamp circuit so that the voltage becomes the same as the reference value.

- **Single tube ABL circuit**

The electric current detected by cathode electric current detecting circuits Q103 (RED), Q203 (GREEN), and Q303 (BLUE) are converted to voltages and respectively integrated. Q16, 17 and 18 determine which RGB voltage is the largest and this voltage is passed through the reverse phase amp IC8 (2/2). If the voltage is greater than the standard value, Q15 acts to lower the contrast.

- **Peak ABL circuit**

Each electric current that is derived from the above RGB cathode electric current detecting circuits is added by IC8 (1/2) and the contrast is lowered by Q14 if greater than the standard value.

- **Σ ABL circuit**

The ABL voltage detected by the secondary side of the flyback transformer goes into the base of Q30 and is compared against the base voltage of Q31. When the flyback current becomes greater than the standard value, the contrast is lowered.

- **G1 blanking circuit**
  The TTL level BLK pulse is amplified to approximately 112Vp-p by circuits Q32 to Q40. They are then supplied to G1 of each of the R. G. B. channels.

3-4. CIRCUIT OPERATION OF DA BOARD

The functions of board DA can be divided into the following:

1. AFC Circuit System
2. Waveform Regeneration
3. Others

1. AFC circuit system

(1) H. SHIFT···· AFC achieves synchronization by comparing H. SYNC and HD (Horizontal deflection). When pulse HD is created from HD by shifting a certain phase (r), and if the AFC is then taken with H. SYNC and HD, the AFC of HD will be shifted by -r. Therefore, changing r results in a H. SHIFT.

In practice, the horizontal deflection HD is feedback to connector 7-b after which it passes through buff Q1 and enters IC8, the H. SHIFT circuit. The noise contents is removed by SW of IC8 and a pulse is produced by IC9 (1/2) using its leading edge as a trigger. Since the integrated value of output ⑦ of IC9 and Vcc/2 is compared by IC10 (1/2) and feedback, the second diagram of Fig. 4-1 becomes a short waveform with a 50% duty factor. This output is once again input into IC9 (2/2) and sent through a similar feedback system. If the phase is controlled using the H. SHIFT voltage (−2.5V to +2.5V) from connector 27-b rather than the comparing voltage Vcc/2, a movement of ± 22% is observed as shown in the third diagram in Fig. 1. By entering this into IC13 and by creating a rectangular waveform with a 50% duty factor, a pseudo HD pulse for AFC use is realized.

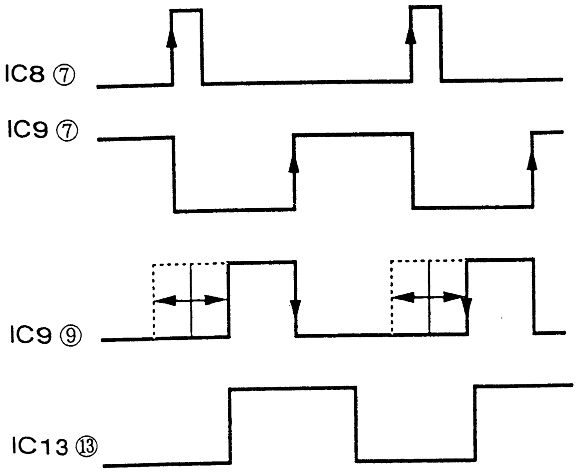


Fig. 4-1.

(2) V. SHIFT··· V. SHIFT uses the same method as V. SHIFT to shift the phase of incoming V. SYNC. The circuit is almost the same as that of H. SHIFT. The V. SYNC of connector 9-a is delayed by about 1V with IC11, 12 and the phase shift is accomplished with the V. SHIFT control voltage of connector 27-c.

(3) AFC circuit ···· IC14 is a hybrid IC that includes a jungle IC and is responsible for AFC and V. HOLD. In terms of its operation, when H. SYNC is fed into pin ⑧ it does a F-V conversion and outputs a H. OSC waveform from pin ⑨ which corresponds to the frequency's f_0. RV1 is used to adjust f_0.

For VIDEO operation, pin ① of IC8 becomes "Low", Q27 goes off, and the voltage that is decided by resister division of RV3, R163, 164 is input into pin ⑤. This becomes the f_0 voltage for VIDEO use.

(4) V. HOLD circuit···········The V. SYNC OUT described in "(2) V. SHIFT circuit" is fed from Q14 to pin ⑪ of IC14. A F-V conversion is done inside IC14 based on this pulse and VD of f_0 corresponding to the input frequency is output from pin ⑫ of IC14.

2. Registration waveform generator

(1) Registration IC section········When VD is input into pin ⑤ of IC201 and HD is input into pin ㉔, registration waveform is created using the leading edge of the input signal as trigger (Fig. 4-2, 4-3). The peak of V. SAW, H. SAW is determined by the voltage of pin ㉗ and ㉕ respectively. Since a parabola wave is SAW × SAW, when the SAW amplitude becomes 1/2 it becomes 1/4. Other waveforms will become 1/4, 1/8 and so forth depending on how many times a multiplication is performed. Pin ③ and pin ④ outputs a rectangular waveform of 1/2H, 1/2V respectively.

(2) V. SIN waveform··········When a full wave rectification is performed with IC208 using the wavefom of pin ⑩ of IC201, the waveform of pin ① of IC208 will be like that shown in Fig. 4-4 ⓐ. The parabola wave of pin ⑪ of IC201 is DC-shifted to make the output of pin ① of IC209 as shown in Fig. 4-4 ⓑ. Q205 to 212 comprise a multiplier and when Fig. 4-4 ⓐ and 4-4 ⓑ are entered into this multiplier, a waveform similar to the one shown in Fig. 4-4 ⓒ is produced. This will be divided by IC210 to make the first half of V-scan into V. SIN 1 and the latter half into V. SIN 2.

(3) H. SIN waveform··········As with V. SIN waveform H. SAW will be full-wave rectified using IC217 while H. PARA will be DC-shifted with IC215. Each of these are multiply by Q213 to 220 to create waveforms similar to V. SIN.

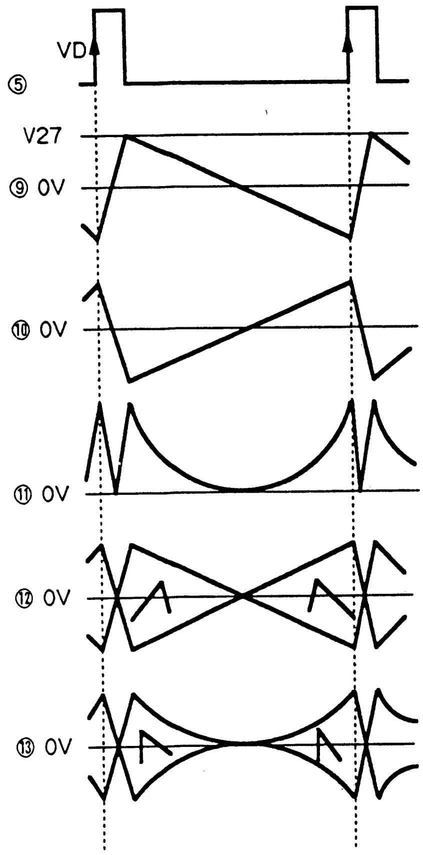


Fig. 4-2.

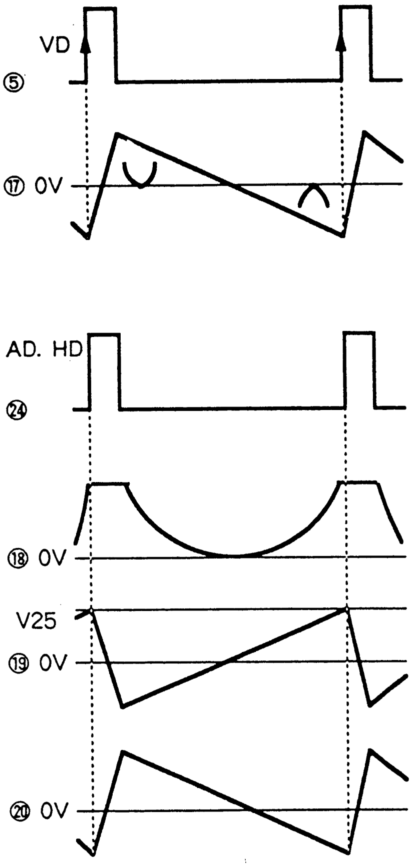


Fig. 4-3.

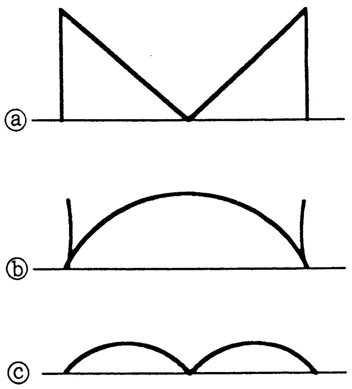


Fig. 4-4.

3. Others

(1) AD. HD··· Registration correction is affected by eddycurrent. To rectify this problem regeneration waveforms are created by advancing the waveform by 1 to 2μS. The horizontal deflection of HD is input into pin ④ of IC3. A constant that will become approximately 3 to 4μS will be used and integrated (IC3 ⑥). Next the horizontal deflection of HD is input into pin ⑪ of IC3 and a pulse created using the leading edge as trigger. This Q output will be integrated and the result of previous integration will be compared against IC4. Since a feedback is applied, the pulse width of pin ⑥ and ⑨ of IC3 will become the same. As a result, the pulse width of pin ⑨ of IC3 will become 3 to 4μS. Because the original DH (pin ⑪ of IC3) is about 2μS, the net effect on the pulse of pin ⑨ of IC3 will be an advancement of 1 to 2μS. This will be input into IC201 to create a horizontal regeneration correction waveform.

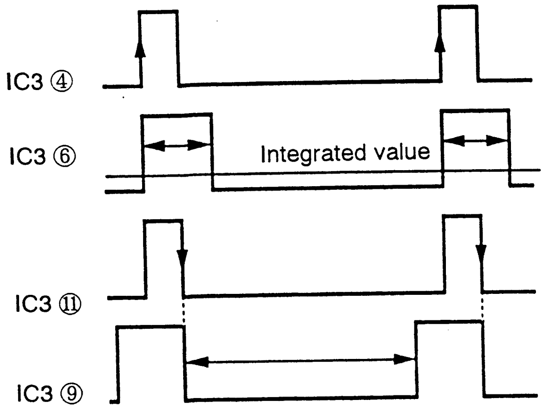


Fig. 4-5.

(2) BLK pulse

1) V. BLK ······· The position of BLK has been fixed so that even if the size is altered, the on-screen position of BLK will not change. By performing slice and comparing operations on a certain level of V. SAW, a pulse such as BLK 1 that is shown in Fig. 4-6 is created (IC220). If the bias of BLK (T) in Fig. 4-6 is structured by adding a retrace line, as well as VD and V. Pulse so that BLK is effected during a H. STOP.

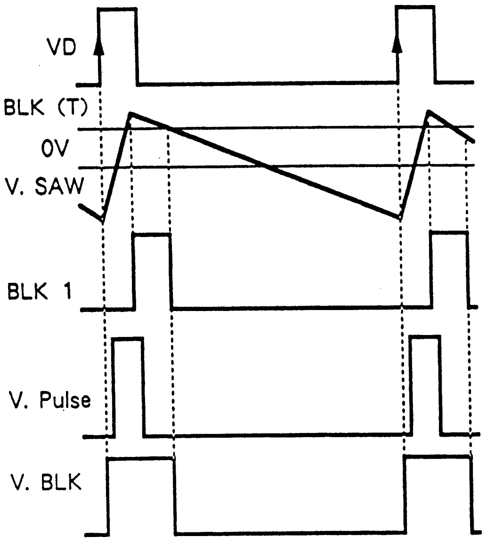


Fig. 4-6.

2) H. BLK ······· Although similar to V. BLK in principle, since H. SAW is created with AD. HD, if the pulse created by slicing H. SAW with H. BLK (R) and if HD is added to create H. BLK, the phase of the two BLK pulses will not align as shown in Fig. 4-7, H. BLK 1. For this reason, H. BLK will be created by padding HD.

A pulse is created by shifting the voltage level of connector 25-c and shifting H. SAW (Fig. 4-8 H. BLK 2). Voltage a will be defined to be the voltage resulting from integration. BLK (R) is created as follows. First add HD to pin ⑪ of IC5 and create a pulse using the leading edge as a trigger. Then take the integrated value of output Q (pin ⑨ of IC5), compare it against a in the foregoing, and apply a feedback until the same integration value is obtain. BLK (L) is created in the same manner.

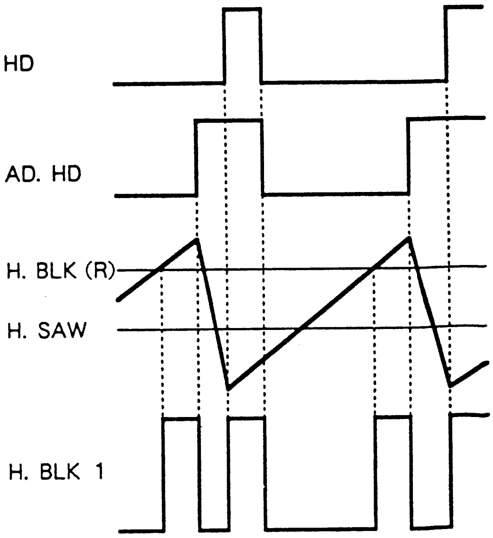


Fig. 4-7.

3) C. BLK ······ Feed BLK pulses V. BLK (1) and H. BLK (2) through the decoder circuit. C. BLK will be output from pin ⑮ (OUT). Pin ⑮ is an OR output which becomes Low only when pins ①, ②, ③, and ⑥ are also Low.

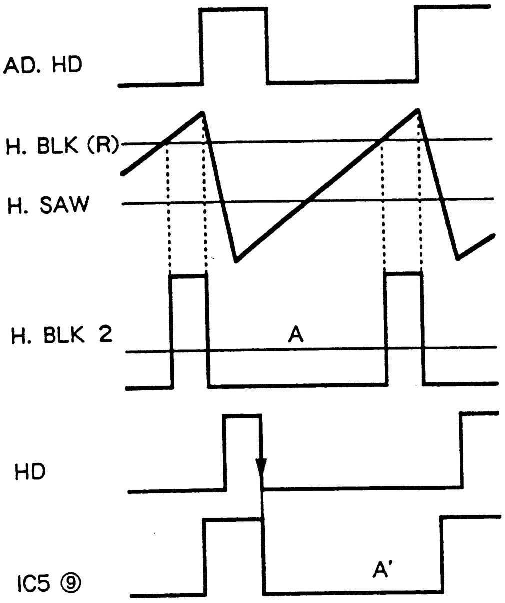


Fig. 4-8.

(3) SIZE ABL circuit··· Since ABL circuit is a total high-voltage limiter, when its size is halved, the current density per unit area is doubled. This can become the cause for partial burning of the tube surface and cracking of the CRT due to heat concentration. This set has a particularly wide size range, the current density can become several times larger. For this reason, a SIZE ABL circuit, which keeps the current density per unit area fixed, was added. Control voltage H. SIZE and V. SIZE are multiplied and the result added to the ABL detection point, as shown in Fig. 4-9. As a result, the detecting voltage is changed. The ABL is therefore being changed through the use of SIZE.

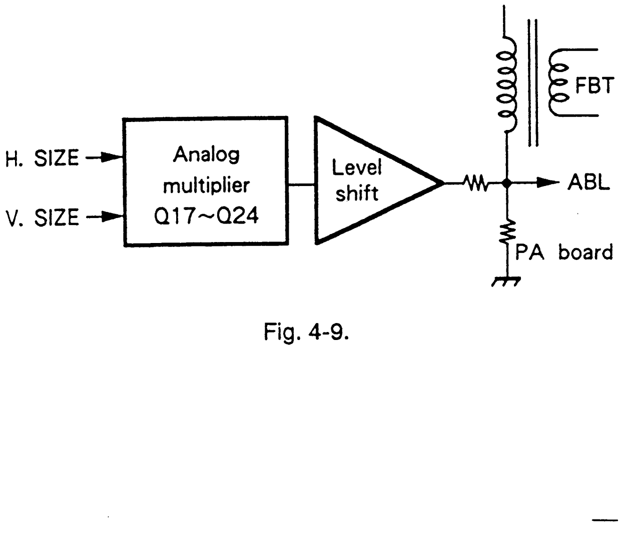


Fig. 4-9.

3-5. CIRCUIT OPERATION OF DB BOARD

This board incorporates functions of conventional regenerator matrix VR as well as those of various other control VRs. The features of D/A converter MB86023 are as follows:

Pins ① to ⑧ ··········· DATA input (standard input)
Pins ⑨ and ⑩ ········· control terminal that selects 1 of 4 possible outputs
Pin ⑪···················· reads DATA upon receipt of a pulse
Pin ⑫···················· activated when low
Pin ⑬···················· digital GND
Pin ⑭···················· analog GND
Pin ⑮···················· −5V
Pins ⑯ to ⑲ ·········· output
Pin ⑳···················· input for reference voltage
Pin ㉒···················· +5V

The voltage produced in reference to input voltages V1 is 7-V1 for DATA 00, 0 for DATA 80, and V1 for DATA FF. IC501 to 504 are buffers while IC505 to 510 are address decoders. The output and the name associated with each signal are shown below:

IC511	pin ⑲	H. SIZE	IC512	pin ⑲	H. SHIFT	IC513	pin ⑲	H. KEYS
	pin ⑱	H. CENT (G) 1		pin ⑱	H. CENT (G) 2		pin ⑱	H. SKEW (G)
	pin ⑰	H. CENT (R) 1		pin ⑰	H. CENT (R) 2		pin ⑰	H. SKEW (R)
	pin ⑯	H. CENT (B) 1		pin ⑯	H. CENT (B) 2		pin ⑯	H. SKEW (B)
IC514	pin ⑲	H. PIN	IC515	pin ⑲	–	IC516	pin ⑲	H. LIN BIAS
	pin ⑱	H. BOW (G)		pin ⑱	H. SIZE (G)		pin ⑱	H. LIN (G)
	pin ⑰	H. BOW (R)		pin ⑰	H. SIZE (R)		pin ⑰	H. LIN (R)
	pin ⑯	H. BOW (B)		pin ⑯	H. SIZE (B)		pin ⑯	H. LIN (B)
C517	pin ⑲	V. KEYS BIAS (B)	IC518	pin ⑲	–	IC519	pin ⑲	V. SIZE
	pin ⑱	–		pin ⑱	–		pin ⑱	V. CENT (G) 1
	pin ⑰	H. KEYS (R)		pin ⑰	H. PIN (R)		pin ⑰	V. CENT (R) 1
	pin ⑯	H. KEYS (B)		pin ⑯	H. PIN (B)		pin ⑯	V. CENT (B) 1
IC520	pin ⑲	V. SHIFT	IC521	pin ⑲	V. SIZE BIAS	IC522	pin ⑲	V. LIN BIAS
	pin ⑱	V. CENT (G) 2		pin ⑱	V. SIZE (G)		pin ⑱	V. LIN (G)
	pin ⑰	V. CENT (R) 2		pin ⑰	V. SIZE (R)		pin ⑰	V. LIN (R)
	pin ⑯	V. CENT (B) 2		pin ⑯	V. SIZE (B)		pin ⑯	V. LIN (B)
IC523	pin ⑲	–	IC524	pin ⑲	–	IC525	pin ⑲	V. KEYS BIAS (R)
	pin ⑱	V. SKEW (G)		pin ⑱	V. BOW (G)		pin ⑱	V. KEYS (G)
	pin ⑰	V. SKEW (R)		pin ⑰	V. BOW (R)		pin ⑰	V. KEYS (R)
	pin ⑯	V. SKEW (B)		pin ⑯	V. BOW (B)		pin ⑯	V. KEYS (B)
IC526	pin ⑲	–	IC527	pin ⑲	–	IC528	pin ⑲	–
	pin ⑱	V. PIN (G)		pin ⑱	H. ZONE 2 (G)		pin ⑱	H. ZONE 3 (G)
	pin ⑰	V. PIN (R)		pin ⑰	H. ZONE 2 (R)		pin ⑰	H. ZONE 3 (R)
	pin ⑯	V. PIN (B)		pin ⑯	H. ZONE 2 (B)		pin ⑯	H. ZONE 3 (B)
IC529	pin ⑲	H. ZONE 4 BIAS	IC530	pin ⑲	H. ZONE 5 BIAS	IC531	pin ⑲	–
	pin ⑱	H. ZONE 4 (G)		pin ⑱	H. ZONE 5 (G)		pin ⑱	H. ZONE 6 (G)
	pin ⑰	H. ZONE 4 (R)		pin ⑰	H. ZONE 5 (R)		pin ⑰	H. ZONE 6 (R)
	pin ⑯	H. ZONE 4 (B)		pin ⑯	H. ZONE 5 (B)		pin ⑯	H. ZONE 6 (B)
IC532	pin ⑱	H. ZONE 7 (G)	IC533	pin ⑱	H. ZONE 8 (G)	IC534	pin ⑱	H. ZONE 9 (G)
	pin ⑰	H. ZONE 7 (R)		pin ⑰	H. ZONE 8 (R)		pin ⑰	H. ZONE 9 (R)
	pin ⑯	H. ZONE 7 (B)		pin ⑯	H. ZONE 8 (B)		pin ⑯	H. ZONE 9 (B)
IC535	pin ⑱	V. ZONE 2 (G)	IC536	pin ⑱	V. ZONE 3 (G)	IC537	pin ⑱	V. ZONE 4 (G)
	pin ⑰	V. ZONE 2 (R)		pin ⑰	V. ZONE 3 (R)		pin ⑰	V. ZONE 4 (R)
	pin ⑯	V. ZONE 2 (B)		pin ⑯	V. ZONE 3 (B)		pin ⑯	V. ZONE 4 (B)
IC538	pin ⑱	V. ZONE 5 (G)	IC539	pin ⑱	V. ZONE 6 (G)	IC540	pin ⑱	V. ZONE 7 (G)
	pin ⑰	V. ZONE 5 (R)		pin ⑰	V. ZONE 6 (R)		pin ⑰	V. ZONE 7 (R)
	pin ⑯	V. ZONE 5 (B)		pin ⑯	V. ZONE 6 (B)		pin ⑯	V. ZONE 7 (B)
IC541	pin ⑲	–	IC542	pin ⑲	–	IC543	pin ⑲	SHARPNESS
	pin ⑱	H. ZONE 8 (G)		pin ⑱	H. ZONE 9 (G)		pin ⑱	COLOR
	pin ⑰	H. ZONE 8 (R)		pin ⑰	H. ZONE 9 (R)		pin ⑰	HUE
	pin ⑯	H. ZONE 8 (B)		pin ⑯	H. ZONE 9 (B)		pin ⑯	VOLUME
IC544	pin ⑲	DRIVE (G)	IC545	pin ⑲	BACK GROUND (G)	IC546	pin ⑲	BLANKING (T)
	pin ⑱	DRIVE (R)		pin ⑱	BACK GRAUND (R)		pin ⑱	BLANKING (B)
	pin ⑰	DRIVE (B)		pin ⑰	BACK GRAUND (B)		pin ⑰	BLANKING (L)
	pin ⑯	CONTRAST		pin ⑯	BRIGHT		pin ⑯	BLANKING (R)

Table. 5-1

3-6. CIRCUIT OPERATION OF DC BOARD

The DC board consists of : (1) V. OUT circuitry, and (2) SUB. OUT circuitry. Both circuits are common for R, G, and B.

1. V. OUT circuitry

1) V. OUT ·······Consists of μPC4558 and μPC1498. As it is common to all 3 channels, here the G-ch will be explained. V. OUT waveform is input into pin ③ of connector DC-2 from the DB board. (Fig. 6-1 A). Although this is input into pin ③ of IC5, since pin ② of IC5 is a GND, a waveform similar to the one shown in Fig. 6-1 B is feedback and pin ③ of IC5 becomes a GND.

   Any voltage error that exists between pins ② and ③ of IC5 will be output from pin ① of IC5 (Fig. 6-1 C) and is received by pin ④ of IC6. The output is through pin ② and a electric current like the one shown in Fig. 6-2 B flows. As a result a voltage waveform similar to Fig. 6-1 D is generated. Fig. 6-1 E is the pulse power supply, and is created by μPC1498 which detects the erroneous portion of the pulse of the input waveform (C) and by accumulating D5 and C10.

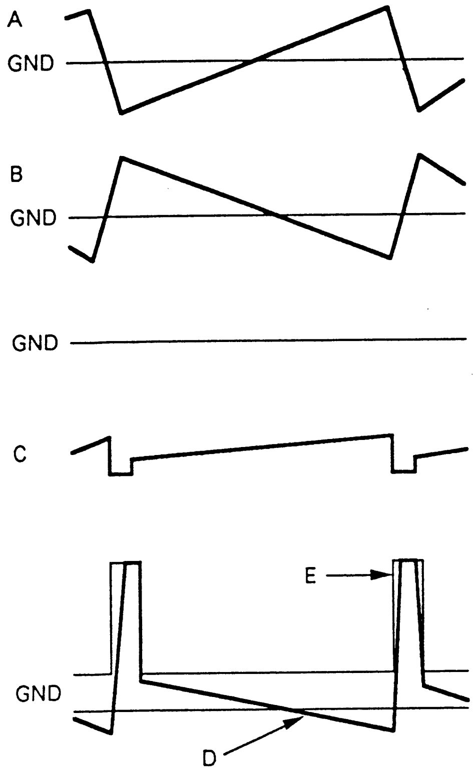


Fig. 6-1.

2) V. STOP PROT ····· Slice the pulse at the output (pin ② of IC6) V. OUT. If C14 does not exist, the waveform of collector Q2 will be a pulse waveform such as in Fig. 6-2 A, practically-speaking, it will be integrated by C14 and become a saw wave like the one in Fig. 6-2 B.

   If an abnormality is encountered in V. deflection, as shown in Fig. 6-1 D, the pulse voltage will disappear and the Q2 collector will attach to +B. When this happens, C14 gradually gets charged as shown by the dotted points in Fig. 6-2 B and exceeds the pin ⑥ IC5 which is the comparing voltage, causing pin ⑦ of IC5 to become High, Q4 to turn ON, and Q5 to turn OFF. This is the V. STOP mode.

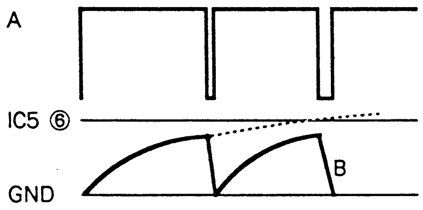


Fig. 6-2.

3) V. PULSE······To output V. PULSE for V. BLK use, slice the V. OUT pulse with IC9 and feed it through D10 and Q6. Note that V. STOP signal is added at D9 so that a BLK is applied during V. STOP.

2. SUB OUT circuitry

1) SUB OUT ······Since all of the 6 channels (R, G, B, H. SUB, V. SUB) uses the same circuit, we will explain about H. SUB (R) in this section. The waveform input into pin ① of connector DC-3 will be amplitude-adjusted by IC101. C301 is a reverse adjustment circuit provided as protection against current overloads. Pin ② of IC301 is the input while pin ③ is the return. Pin ⑥ is the out for the voltage error between input and output.

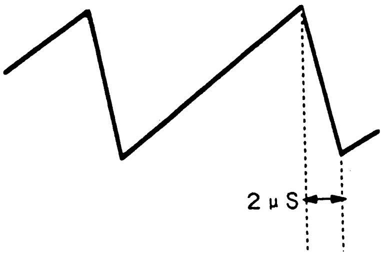
   As frequency performance is important, the gain for operational amplifier will be kept low and a discrete AMP used. For the discrete AMP section also, we have used an active load rather than a negative load. This constant-current circuit is comprised of D302, Q301, and R318, and has a current flow of 18mA.

2) PULSE POWER SOURCE····· The current required to produce a correcting waveform with a retrace of 2μS and H. SAW waveform with 1.5Ap-p will be −30V, as the following shows:

$$V = -L\frac{di}{dt} = -40(\mu H)\ \frac{1.5(A)}{2(\mu S)} = -30V$$

For this reason, PULSE power supply is used only for return lines.

AD. HD is added to pin ① of connector DC-13, and the + side PULSE created at Q105 and the − side PULSE at Q108. The PULSE power supply is produced by adding ± 15V to each of these PULSES.



3) CURRENT LIMITER ··This is a limiter circuit for negative overloads on ±15V lines. The +15V side is made up of Q9, R64, and 76. When current flows through the base-emitter resistance and exceeds the transistor's V_{BE}, Q9 is turned ON and is added to V. STOP PROT.

The limiter current is approximately 4A.

Same for the − 15V side.

3-7. CIRCUIT OPERATION OF K BOARD

1. Dynamic focus circuit

1) H dynamic focus

H parabola waveform input into pin ⑦ of Connector K-1 is phased-reversed at 1/2 of IC201 (μPC184C) and further amplified by a non-reversible AMP consisting of drivers Q201 and Q202. This is then input into a DFT (Dynamic Focus Transformer). DFT is also capable of providing an amplitude of 300Vp-p at the DFT OUT when the phase is shifted and amplified and when the input is 3Vp-p.

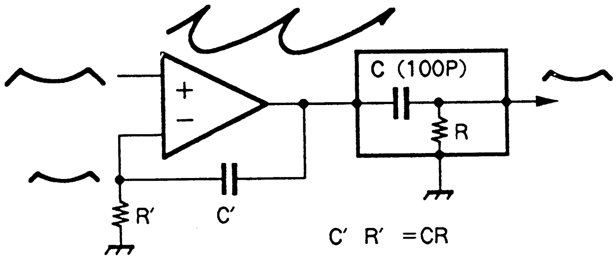
2) V dynamic focus

The dynamic focus waveform is added within the focus pack to the focus voltage through condenser integration.

Due to pressure and size considerations, a large size condenser could not be selected and the one that was used at this time has a very small capacity of 100PF.

Unlike the H waveform, the V waveform has a very low frequency which makes it difficult for the waveform to path, causing a reduction in amplitude and shifting of the phase. In view of this, a circuit like the one shown below was used, enabling us to realize the transmission of the dynamic focus waveform. By placing a time constant that is the same as the time constant in the focus pack within the negative feedback system, it will be possible to send the desired waveform as output.

〈Equivalent circuit〉



2/2 of IC201 (μPC814C) is the operational amplifier of the negative feedback system, Q203 the reversing amplifier and Q204 the output buffer. The time constant of C210 (0.1MF) and R212 (10K) is aligned with the time constant within the focus pack. In practice, since this C, R (C210, R212) is a differentiator, it is not possible to apply the negative feedback system to the direct current portion. For this reason, the direct current portion is first integrated by R214 and C209, and then feedback to R213. The V content requires an amplitude of about 100Vp-p within the focus pack. The output of Q204 has an amplitude ranging from 150V to 400Vp-p and its magnitude is determined by the frequency of vertical. By entering the vertical content, output from Q204 to the secondary side of DFT, the horizontal content is modulated and the total output is input into the focus pack.

2. Audio amplifier

The audio signal input from pin ① of connector K-3 goes through buffer Q205 and is received by IC203 (μPC1241H) which is the amplifier IC. Speakers are driven directly by this IC. Q206 is a series regulator transistor and is used to suppress the power supply's ripples from appearing in the sound.

3-8. CIRCUIT OPERATION OF Y BOARD

3-8-1. Power Supply Block (PS1, PS2, D1, D2)

PS1 and PS2 serve as a power cutting fuse when a voltage overload occurs within board Y. In addition, D1 and D2 convert the voltage from +5.7V (−5.7V) to +5.0V (−5.0V). When pressing the main power switch of the set, SUB +5V is supplied, and when pressing the power switch of the commander, ± 5.7V is supplied.

3-8-2. CPU Block

1. CPU (IC1)

A Z80 series 8-bit CPU with SIO, TIMER and other supporting ICs integrated into a single chip is used.

2. Memory (IC2, 3, 4)

This is made up of programmable ROM (IC2), a general purpose S-RAM (IC3) for flag and data READ/WRITEs, and a non-volatile ROM (IC4) used to record adjustment data, etc.

3. BUS buffer (IC7, 8)

A hysterisis-type current buffer is used for data transfers to systems external to the Y board (DB and L boards).

4. RS422 (IC24)

An RS422 transmitter/receiver for communications with external computers, automatic adjustment devices, etc.

5. Reset circuit (IC5, Q1, 2)

A power-on reset circuit for the CPU and SIRCS DECODE IC. Q1 and Q2 operate so that a normal reset occurs during instantaneous drop in power voltage caused by sudden black out, etc.

3-8-3. SIRCS Block

1. SIRCS decoder (IC9), wait control (IC6)

This IC decodes SIRCS signals to enable the codes to be read by the CPU. The following processes take place from the time the SIRCS signals are received until the codes are read by the CPU:

* The "CONT" terminal is set to Low when a valid SIRCS code is received.
* A CPU interrupt occurs and the CPU turns the "CE/OE" signal of IC9 to Low.
* IC6 (mono-multi) puts the CPU in WAIT state for a few msec.
* Finally, the data are read into the CPU.

2. Power control (Q3, 4, 5)

When IC9 decodes a POWER ON (OFF) code, it unconditionally turns Q3 ON (OFF) and sends (cuts) the current supplied to the "power cont" line, thereby enabling control of the power supply. When the protector is activated, the power supply is cut by externally dropping the "power cont" line to GND. However, it should be noted that in such cases the operation of the protector is detected by Q4 and IC9 is reset by Q5.

3-8-4. I/O Port Block

1. Address decoder, parallel I/O port, Interrupt control (IC10, 28)

IC10 is a dedicated gate array with the above functions and is a PORT that is used to READ ch-select and other control/input signal information.
Additionally, it receives the control line for each protector and is also equipped with such functions as generating a CPU interrupt while it is in operation.

2. DIP SW (SW1, 2)

SW1 is a special switch used for mode adjustments at the factory; normally all bits (SW1 − 1 to 4) must be set to ON.
When SW2 is pressed, all adjustment data defaults to the factory setting.

3-8-5. f_H/f_V Detect Block (IC12)

The present deflection frequency is detected from the VD/HFHD signals supplied by the deflection system and the information is sent to the CPU.

3-8-6. SYNC Block

1. SYNC control & clamp pulse generator (IC11)

This is a gate array that generates SYNC pulses for the deflection system and clamp pulses for the signal system. It uses SYNC signals received from the signal board (H/C-sync, V-sync, Sync on Green) for its input. It features:

* Detection of input SYNC signals (existence or non-existence of each SYNC and its polarity)

* Selection of SYNC source (H/V-sync, Sync on Green or Composite-sync)
* Alignment of SYNC polarity (Reversed when H/V-sync has a positive polarity)
* H/V separation for Composite-sync and Sync on Green
* Phase control of clamp pulses
* Width control of clamp pulses
* Transmission of various function control signals and information through the CPU SUB

2. H-sync reform (IC6)

Maintains the width of H-sync sent to the deflection system for approximately 2 μ Sec.

3. V-sync detect (IC26)

Detects whether V-sync out pulse of IC11 exists or not and sends this information to the CPU.
For example, this is done to determine if the signal connected to H/C-SYNC input terminal is composite or not.

3-8-7. Character Generator/Internal Signal Generator Block

1. Character GEN. INT-SG (IC13, 14, 15, 16, 17)

Whenever an input exists, a clock synchronized to "HFHD" and "VD" are used to generate each test pattern and character. When input does not exist, the H and V-sync pulses, test patterns, and characters are created by a crystal-oscillated clock. (IC13)
IC14 is a high-speed S-RAM to record the position and color of the screen characters, while IC15 to 17 are mask ROMs to record character font data.

2. TTL to ECL converter (IC18, 19)

Because INT SG, character R/G/B, and BOARDER (shadow of characters) signals contain high-frequency contents, they are converted to ECL before being sent to the signal system board.

3. PLL (IC20, 21, 22, 23, 25, Q6)

Characters and internal signals are generated by synchronizing them with the incoming signals (HFHD and VD to be precise) with the use of a PLL circuit.
The output from the phase comparator system (IC20) passes through an active filter composed of C44, R94, 95, and IC20 are then fed into a VCO (IC21). The output from VCO first goes into IC13 "CKIN" and then passes through a 1/417 pre-scaler equipped within IC13. Finally, the output is returned to the phase comparator.
Since a single VCO imposes a limit on the frequency range that can be locked, 2 VCO units (IC21 is actually composed of 2 VCO units) are used: one for high-band use and the other for low-band use. The VCOs are switched by IC22's voltage converter and the flip-flop of IC23.
Furthermore, to improve the stability during locked conditions, Q6 and IC25 are used to control the polarity of the correcting waveform of IC20 pin ③.

4. VD synchronize (IC26, 27)

When VD and HFHD are in a certain phase relation, IC13's internal counter deviates by 1 count and may cause V-jitter of the characters. For this reason, the phase of VD is shifted to a stable position.

3-9. CIRCUIT OPERATION OF PA AND PB BOARDS

1. High-voltage generator

As this is a wide-range multiscan compatible unit, it is difficult to construct a high-voltage circuit by synchronizing with f_H as in previous circuits. Therefore, an asynchronous type high-voltage generator having its own oscillator was devised.
The oscillating element X1 is the oscillator's basic clock and oscillates at approximately 500kHz. This clock is divided by IC7 and IC8, generating a 15.625kHz pulse as its internal oscillator (INT OSC). This pulse is output from pin⑤ of IC8 and this INT OSC is used as a switching pulse between two circuits, one of which is sent through buffer Q3 and used in the high-voltage generator circuit. The other passes through buffer Q4 and connector PA-3 and becomes the switching pulse for the negative power supply for board E. The pulse passes through buffer Q3 and connector PA-7 and added to Q6, the transistor used to drive transformer Q6. The output of this drive transformer (T2) drives FBT's converter Tr (Q10). Q19 is the power current source for controlling the drive condition of converter Tr (Q10). By fixing its base and by adding the same voltage as +B of FBT to the emitter resister (R112), it modifies the energy of the primary side of the drive transformer in accordance with the HV load, enabling converter Tr (Q10) to be driven most efficiently.
The basic section of the high-voltage circuit is the same as with previous circuits in which Q10 is the converter Tr; D20 and D21, the damper diode; C51, the common condenser; L3 and L4, the dummy L; and C54, an S-shaped condenser. To realize high output to FBTs are connected in parallel. From one of them (FBT 1) the MV for use as the focus voltage is extracted.
As this particular system uses an asynchronous high-voltage method, the high voltage's ripple content can easily affect the screen. For this reason, the high voltage generated by FBT is once passed through a filter (HVF) and then is added to HVB which distributes and detects high voltage. This is then supplied to each CRT.

3-10. CIRCUIT OPERATION OF E BOARD

1. F-V conversion

H-KEY, H-PIN and H-SIZE are input through E-1 connector and added at IC106 (1/2). This output, (a) passes R131 and is input to IC105.

(b) is input to IC106 (2/2) and compared with H-SIZE detection output. The error difference is input to IC103 (2/2) and fully integrated and amplified, which then passes R186 and is input to IC105.

It is again fully integrated at IC105 (1/2). This DC passes R103 and switched by Q101. IC101 (1/2) generates pulse which is synchronous to $5\mu S$ width f_H and inputs it to Q101 gate.

Here, voltage proportional to H-SIZE voltage and f_H, is generated. This output passes IC102 buff, is integrated at R111, C105, R109 and C104, and output at IC104 (1/2) to complete F-V conversion.

2. Negative power section

F-V conversion output and negative power is compared at IC104 (2/2) and added to IC111 pin ①.

IC105 (2/2) generates bias and adds it to IC104 (2/2). IC111 is a switching regulator. IC, and outputs pulse which complies to pin ⑭ and pin ① voltage, to pin ⑦.

This pulse is switched at Q109 and drives Q107, 108, and the output drives Q110 through T105.

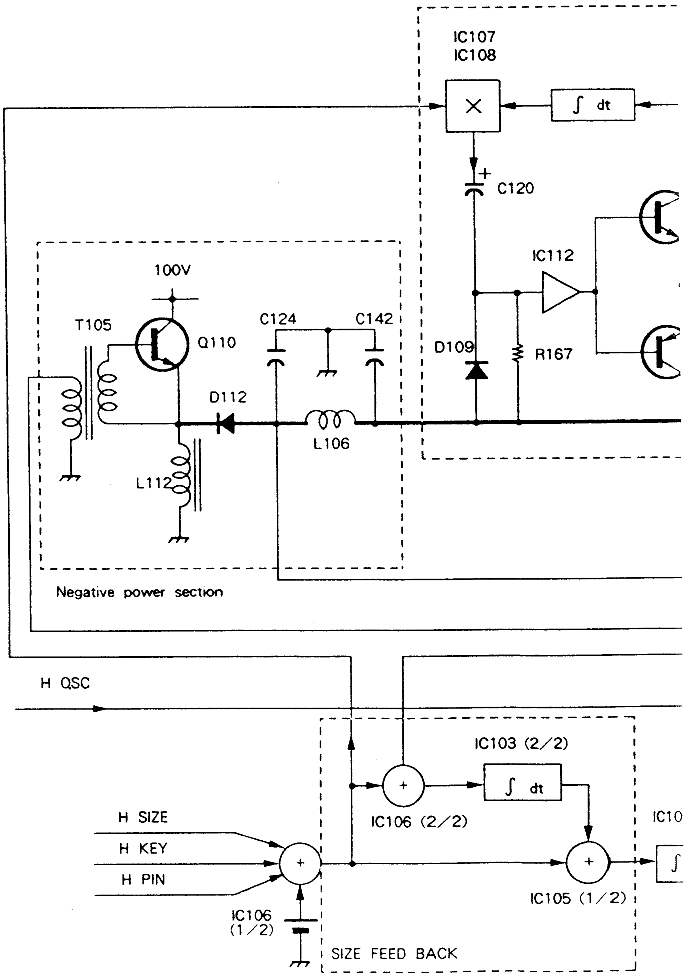
Pulse output to Q110 source is rectified at D112, C124 to generate negative power. R208 is for current detection and IC111 pin ⑤ is connected at top end to protect against over current.

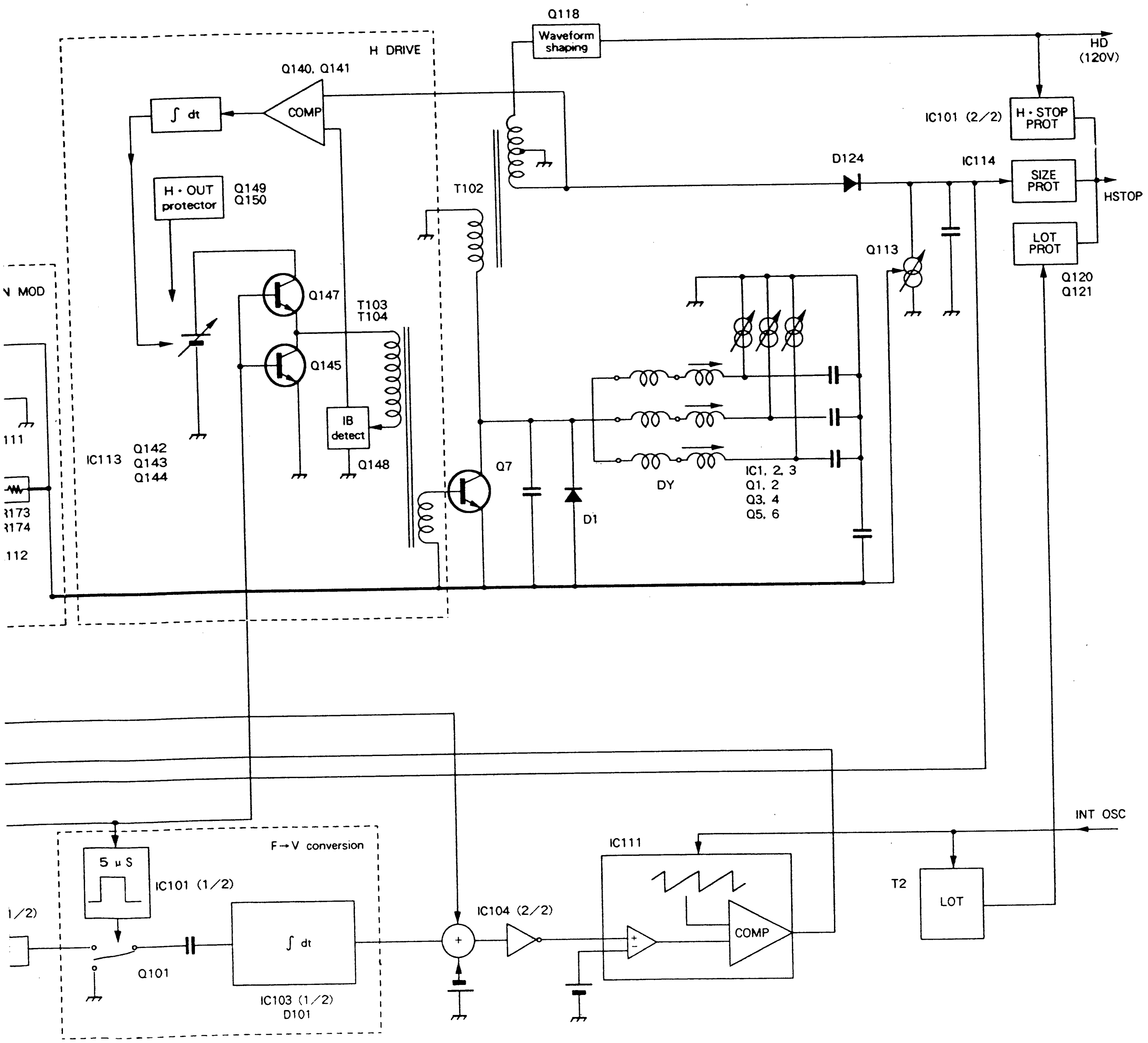
3. PIN MOD section

H-KEY, H-PIN correction wave is input through E-1 connector, added at IC106 (1/2) and output from pin ⑦. This output passes C110 and is input to IC107 pin ④. On the other hand, PIN MOD OUT voltage divided by R150, R285 and R149 is input to IC107 pin ⑨. With these two inputs, PIN MOD correction voltage which corresponds to f_H H-SIZE is output to IC107 pin ⑭.

This output is amplified at IC108, passes Q103 and Q104 buff, and is input to IC112. When this occurs, PIN MOD correction wave is clamped to negative power by D109, IC112 operates around negative power electric potential.

Q111, 112 are driven by voltage output from IC112 pin ① and PIN MOD OUT voltage is output to Q111, 112 source.




Q118
Waveform shaping
HD
(120V)
H DRIVE
Q140, Q141
∫ dt
COMP
H・OUT protector
Q149
Q150
IC101 (2/2)
H・STOP PROT
D124
IC114
SIZE PROT
HSTOP
T102
LOT PROT
Q113
Q120
Q121
MOD
Q147
T103
T104
Q145
111
IC113
Q142
Q143
Q144
IB detect
Q148
Q7
DY
IC1, 2, 3
Q1, 2
Q3, 4
Q5, 6
D1
173
174
112
INT OSC
F→V conversion
IC111
5 μS
IC101 (1/2)
1/2)
T2
LOT
IC104 (2/2)
∫ dt
COMP
Q101
IC103 (1/2)
D101

4. H-drive section

H. OSC is input from E-1 connector pin ⑤, passes R233 and input to Q130, 131 base. The signal is divided into two by Q130, 131 emitter.

One signal passes C161 and input to Q145 gate. Q145, 146, 147 are transistor for per-drive. These transistor switch Q7 (H. OUT) through T103, 104 (HDT). The other signal passes R234 and is input to IC113 (1/2).

IC113 output pulse becomes saw-tooth wave at R238, C150. Q132 is a constant current source. Pulse is compared at Q133 and 134 to control Q132 constant current source and keep saw-tooth wave amplitude constant.

This saw-tooth wave and IB2 constant circuit output voltage, which will be explained later, are compared at IC113 (2/2) and the pulse difference is output to IC113 pin⑦. This pulse passes Q135, 136 buff and input to Q142 gate. Q142, D118 and C159 construct a STEP UP regulator. Normally, 100V is supplied to Q143 and Q144 collector, but when Q142 switch, the additional voltage is supplied to Q143 and Q144 collector, Q144 emitter is connected to Q146, 147 collector. Normally, 100V power is supplied through Q143, 144 series regulator, but when more drive is needed, Q142 operates to supply power over 100V.

(IB2 constant circuit)

Current (IB) which flows on the primary side of T103, 104 (H. D. T) is detected at R267, 268 and generated as voltage at Q148 collector. This voltage passes R225 and input to Q140 base. In the meantime, H. O. T. secondary side H. Pulse divided by R259, 260 and R259 is input to Q141 base. By comparing the peak voltage of the two, IB2 is always remaind constant.

H. Pulse > At IB2 peak (under-drive)

Q140 cut off → Q139 base potential rise → Q139 collector potential lowers → Q137 base potential lowers → Q137 collector potential rises → Q144 emitter potential rises → to over-drive.

H. Pulse < At IB2 peak (over-drive)

Q141 cut off → Q139 base potential lowers → Q139 collector potential rises → Q137 base potential rises → Q137 collector potential lowers → Q144 emitter potential lowers → to under-drive.

Feedback is conducted as above.

5. H-size feedback section

H. O. T. secondary side H. Pulse is peak rectified at D124 to convert it to H. size detection output.

Q113 is a variable current source, and works to get the same detection output even when f_H is different at the same pulse height. This output is returned to IC106 (2/2), compared with input and the error difference is controlled.

6. HD output section and H. STOP protector section

AFC HD clamps H. O. T. secondary side H. Pulse at C144, D113, re-shapes the wave at Q118, passes pulse through Q116, 117 and outputs from E-1 connector pin ⑨.

HD output from Q116, 117 emitter is input to IC101 pin ⑪.

As long as HD is input to IC101 pin ⑪, pin ⑩ is High. Therefore, Q115 is ON and H. STOP line is normally Low.

If HD is not input, IC101 pin ⑩ becomes Low and Q115 turns OFF and as a result, H. STOP line becomes High and set power turns OFF.

Other protectors are H-SIZE MAX/MIN protector and 100V line LOT circuit over current protector.

IC114 detectors are H-SIZE MAX/MIN.

When H-SIZE becomes too large, IC114 pin ① becomes Low.

When H-SIZE becomes too small, IC114 pin ⑦ becomes Low.

This output passes D139 and connects to IC101 pin ⑬.

When pin ⑬ becomes Low, IC101 pin ⑩ becomes Low and protector actuates.

LOT circuit over current protector detects current at R221. When there is over-current, first Q120 turns ON and then, Q121.

Q121 collector is connected to IC114 pins ①, ⑦ line, and protector actuates as above.

3-11. CIRCUIT OPERATION OF BC BOARD

3-11-1. SIRCS signal filter circuit (IC102 to 104, Q102, 103)

SIRCS signals, sent from SIRCS receiver boards (NA, NB) on projector's main unit, enter to BC board via pin 8a and pin 8c of connector BC-1, respectively. Polarity of signals is negative. These signals pass filter circuits. Because these filter circuits are of same configuration, only description of NA board is given here.

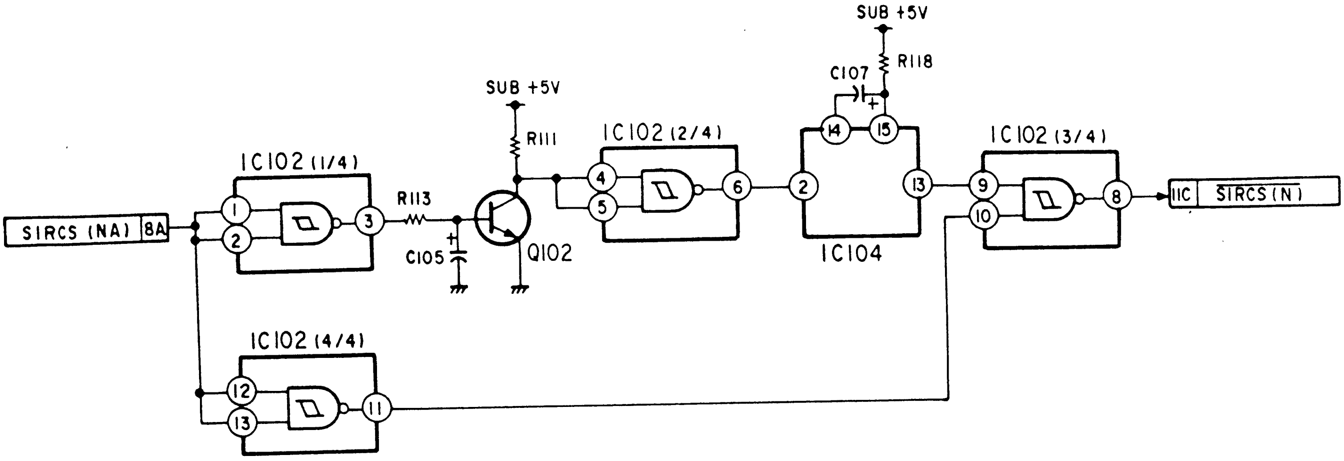

SUB +5V
SUB +5V
C107
R118
R111
IC102 (1/4)
IC102 (2/4)
IC102 (3/4)
IC102 (4/4)
IC104
R113
C105
Q102
SIRCS (NA)
8A
11C
SIRCS (N)
1
2
3
4
5
6
2
13
14
15
9
10
8
12
13
11

Fig. 11-1.

The filter circuit prevents input signal from being sent to BB board if noises other than SIRCS signal (e.g., noise from fluorescent lamps) are coming in.

If input signal is a SIRCS signal, it is inverted in IC102 (1/4). This starts charging to C105, and Q102 is turned ON. IC102 (2/4) inverts this again, and triggers IC104. IC104 generates positive gate pulse with width of 155 msec., and outputs it from pin ⑬. Only when output from pin ⑬ of IC104 is High, IC102 outputs SIRCS signal inverted by IC102 (4/4) from its pin ⑧.

If input signal is narrow noises other than SIRCS signal, charging to C105 does not occur and Q102 is not turned ON. So, no output appears from pin ⑧ of IC102.

After passed filters, NA and NB signals are ORed by D103 and D104, then sent to BB board.

3-11-2. SIRCS signal switching circuit (IC101, Q101)

This circuit sends SIRCS signal, which processed on INDEX board, to Y board when INDEX board is installed on SLOT A or SLOT B.

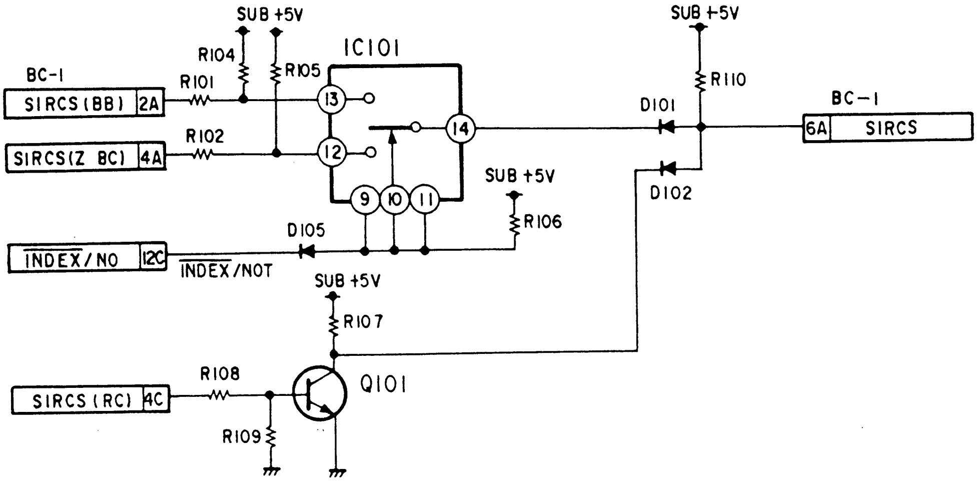

SUB +5V
R104
IC101
BC-1
R101
R105
SIRCS (BB) 2A
13
14
R102
SIRCS (Z BC) 4A
12
9 10 11
SUB +5V
R110
D101
BC-1
6A SIRCS
D102
SUB +5V
R106
D105
INDEX/NO 12C
INDEX/NOT
SUB +5V
R107
R108
Q101
SIRCS (RC) 4C
R109

Fig. 11-2.

IC101 outputs SIRCS signal, which is processed in BB board and applied on its pin ⑬, from its pin ⑭ if pin 12c of connector BC-1 is OPEN state in normal state of operation. If INDEX board is installed, however, pin 12c is pulled down to GND. In this case, IC101 outputs the signal applied on its pin ⑫, that is, SIRCS signal sent from INDEX board. Also, to make control from the commander of main unit effective when INDEX board is installed, following 2 signals are ORed by D101 and D102, then sent to Y board:

(1) signal switched by IC101
(2) SIRCS signal from the commander of main unit (positive polarity) entered from pin 4c of connector BC-1 and inverted by Q101

3-11-3. INPUT A/B signal switching circuit (RY101 to 103, Q104, 105)

This circuit selects a signal from the one entered from SLOT A or the one entered from SLOT B.

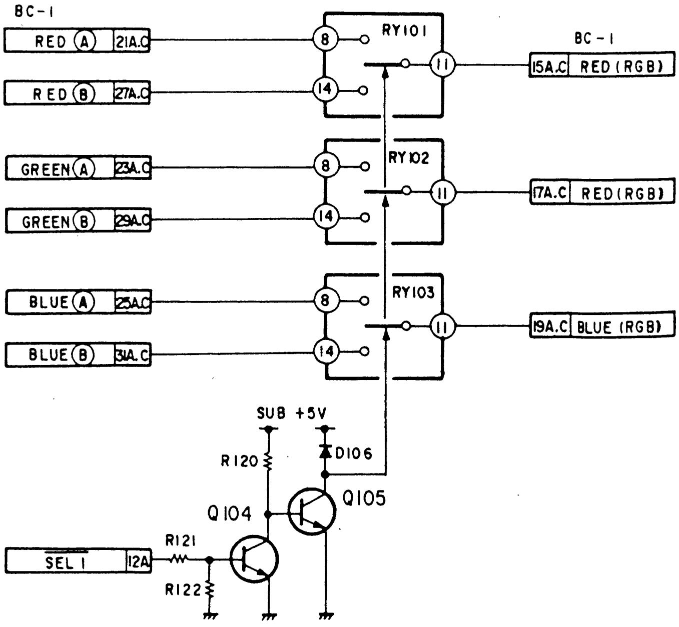

BC-1
RED (A) 21A.C
RED (B) 27A.C
RY101
8
14
11
BC-1
15A.C RED (RGB)
GREEN (A) 23A.C
GREEN (B) 29A.C
RY102
17A.C RED (RGB)
BLUE (A) 25A.C
BLUE (B) 31A.C
RY103
19A.C BLUE (RGB)
SUB +5V
R120
D106
Q105
Q104
R121
SEL 1 12A
R122

Fig. 11-3.

SEL 1 on pin 12a of connector BC-1 becomes Low when selected SLOT A, or becomes High (+5V) when selected SLOT B. Q104 and Q105 is used to convert these Low/High signals into current sufficient enough to switch RY101 to RY103.

Relays switch to pin ⑧ when INPUT A is selected, and to pin ⑭ when INPUT B is selected to send the selected signal to BB board.

3-12. CIRCUIT OPERATION OF Z BOARD

The block diagram of the index board (IDB) which indexes each projector in the multi billboard system, is shown in Fig. 12-1.

- **Functions**

The rotary encoder sets an index to each board, and only the board with the selected index is sent to the projector unit which then connects the SIRCS after this. And the index is displayed on the LED.

Other options can also be set using the 4-bit DIP SW. Both Sub 5V (multi billboard) and 15.5V (VPH-1200) can be used to operate the board.

- **Automatic power on (when operating by Sub 5V).**

When the Sub 5V turns on, and the DIP SW4 is on, the CPU outputs the "POWER ON CODE" to the main unit. By using this setting, there is no longer any necessity to turn the power on, using the remote commander after the main switch is turned on in the multi billboard, as before.

- **Power current rush Countermeasures (when operating with the Sub 5V)**

When the powers of many projectors are turned on all at once, this causes the power current rush to occur. To avoid this, projectors can be started up one by one, by delaying power currents corresponding to the index number set by the user.

This switchover is performed using the DIP SW3. However, this function can only be used when the Sub 5V power is supplied.

Although the conventional VPH-1270 can only turn on the power of the projectors all at once, in comparison with the multi billboard, as the VPH-1270 is not used simultaneously very often, countermeasures for rush are not be considered here.

- **The screen display**

The index no., set time, etc. of the main unit are displayed for the multi billboard. However, as a code which is not set is sent to the VPH-1270, a strange display is output on the screen (To avoid this, it is necessary to change the software of the main unit). By setting DIP SW2, the code causing this display can be stopped from being output.

- **Normal operation**

The CPU reads the value of the rotary encoder (SW1 and SW2) latched by IC11, and outputs from port as the index no. (00 to 99), through the 7-segment driver (IC6 and IC7). The SIRCS signal from J1 or the connector (Pin 31C) passes through the following routes.

Signal route 1: It is always output to the "to NEXT projector" (J2) terminal via relay (RL1).

Signal route 2: When the power is off, it is output to the "to Y of own projector" (J3) terminal via RL1.

Signal route 3: When the power is on, it is input into the SIRCS decoder (IC1) via the inverter (IC8).
The CPU reads the SIRCS data latched by IC10, from the data bus.
At that moment, if the condition of the projector is "enable", the SIRCS data created inside the CPU is output from port. The data passes through the buffer (IC9), and is output to the "to Y of own projector" (J3) or Pin 31A of connector (CN1).

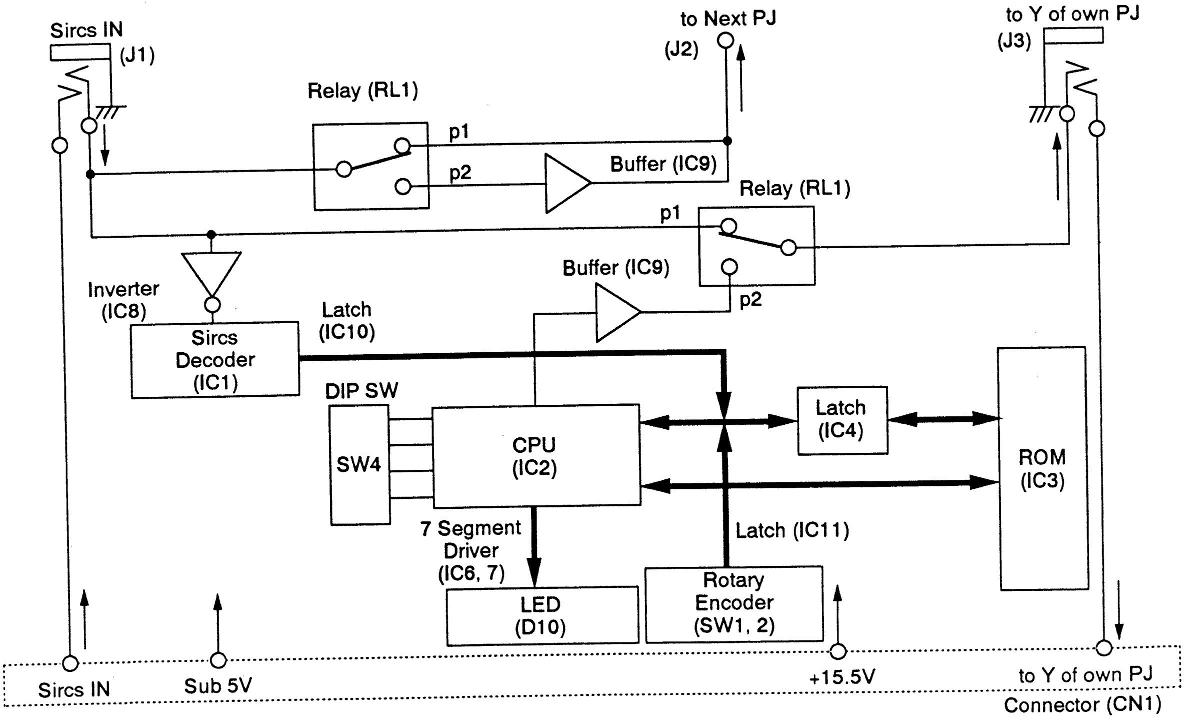


Fig. 12-1.

3-13. CIRCUIT OPERATION OF LA BOARD

This board consists of the error code display section and the timer section. Their operations are as follows.

1. CODE DISPLAY

The data signals D0 to D7 pass through the buffer of IC1 (TC74HC541P), are decoded by IC2 and IC3 (MC14495P1), and then displayed on the 7-segment, 2-digit LED of IC5 (GL6R202). The codes displayed are PROTECTOR CODE, RS422, COMMUNICATION ERROR CODE, DATA SAVING CODE and SELF CHECK CODE.

- Message code list

The codes which are displayed on the 7-segment, 2-digit LED, on the board are shown.
When any of the following codes is displayed, the LED on the Y board also lights up.

1) PROTECTOR CODE

During the operation of each type of protector, the following codes are displayed, and the power is turned off automatically.

CODE	FAN stop	H-stop	I K-over	V-stop	HV-over	power down
01....	*	–	–	–	–	–
02....	–	*	–	–	–	–
03....	*	*	–	–	–	–
04....	–	–	*	–	–	–
05....	*	–	*	–	–	–
06....	–	*	*	–	–	–
07....	*	*	*	–	–	–
08....	–	–	–	*	–	–
09....	*	–	–	*	–	–
0A....	–	*	–	*	–	–
0b....	*	*	–	*	–	–
0C....	–	–	*	*	–	–
0d....	*	–	*	*	–	–
0E....	–	*	*	*	–	–
0_....	*	*	*	*	–	–
10....	–	–	–	–	–	–
11....	*	–	–	–	*	–
12....	–	*	–	–	*	–
13....	*	*	–	–	*	–
14....	–	–	*	–	*	–
15....	*	–	*	–	*	–
16....	–	*	*	–	*	–
17....	*	*	*	–	*	–
18....	–	–	–	*	*	–
19....	*	–	–	*	*	–
1A....	–	*	–	*	*	–
1b....	*	*	–	*	*	–
1C....	–	–	*	*	*	–
1d....	*	–	*	*	*	–
1E....	–	*	*	*	*	–
1_...	*	*	*	*	*	–
20....	–	–	–	–	*	*

- When the codes above are displayed, the adjustment data immediately before will be lost.
- When the unit is restored normally by turning off the power of the main unit or by turning off using the remote commander, the code displayed disappears.

2) RS422 COMMUNICATION ERROR CODE

A0·····Receive time out error (The time between bites of receiving data is too long.)
A1·····Handshake error (The data access with the master side does not match.)
A2~AE
bit1····Over run error (The next data has come, before reading has been completed.)
bit2····Parity error (Bit error of parity odd/even)
bit3····Framing error (The stop bit has been not detected.)

- The available software will not be affected even during the error code display.
- The display disappears when the next communication has been performed normally.

3) DATA SAVING CODE

This is displayed during data block transmission with the backup memory (EEPROM).

C0·····EEPROM initializing (All datas are initialized).
C1·····Setting of the factory forwarding data. (All adjustment datas are registered as factory forwarding datas, at that point).
C2·····USER MEMORY RESET. (All adjustment datas become factory forwarding datas).
C3·····Data saving due to the power off/memory keys. (Saving necessary items in the non-volatile memory).

- The usual operations are not effective during this display.
- Lights are turned off when block transmission has been completed. (Approx. 1 min. at the maximum).
- If it keeps on lighting for more than 2 minutes, the tape save error has occurred or something has gone wrong.

4) SELF CHECK CODE

This is displayed mainly during the self-check program when the power is turned on.

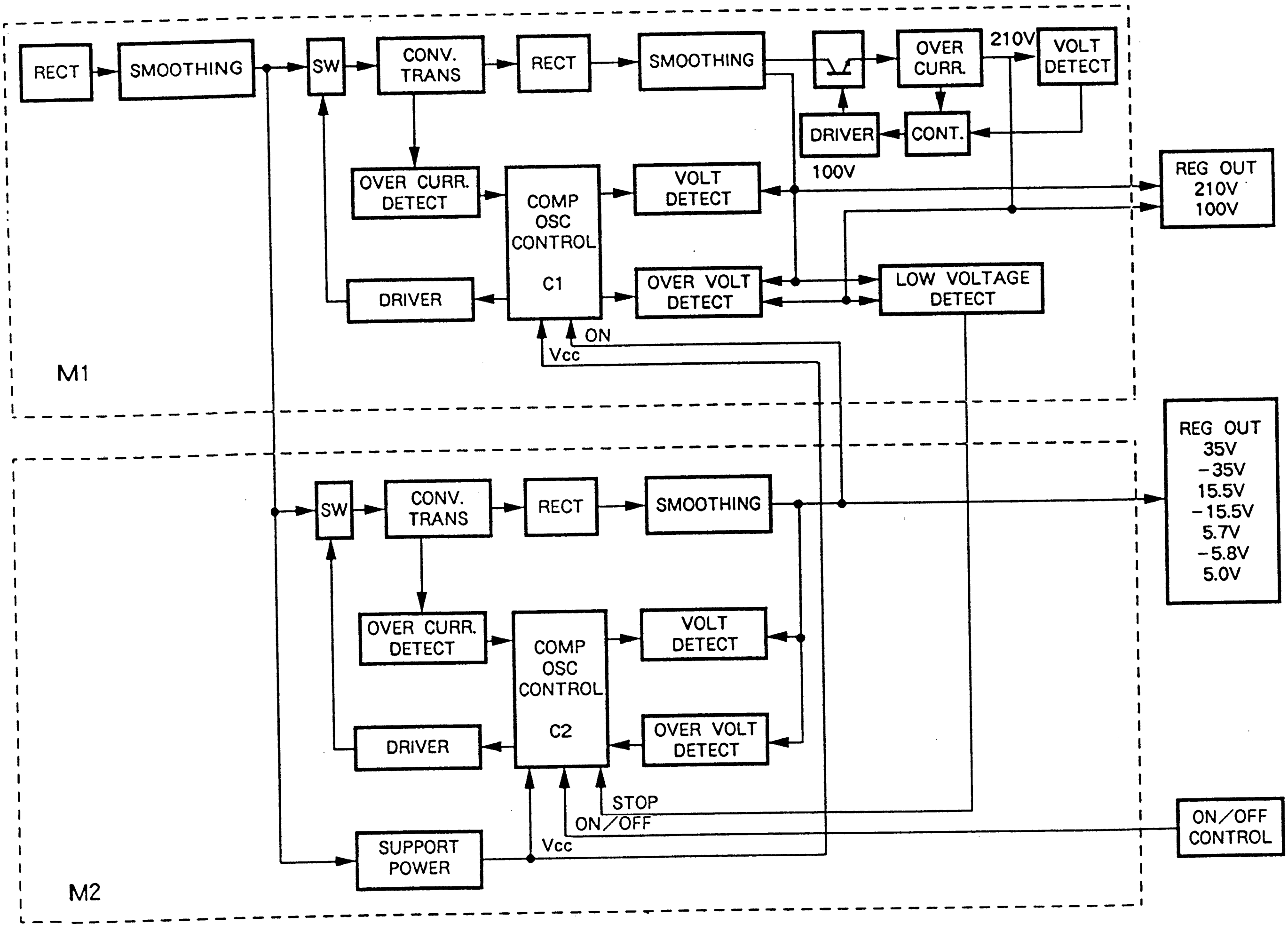
E0·····TRAP error (when programs cannot be carried out normally, due to momentary black-outs and so on.)
E1·····RAM check
E2·····ROM check
E3·····EEPROM check
E4·····PIO check

- When "E0" is displayed, pay special attention as there is a possibility that the adjustment data immediately before could not be saved. However, the operation during this display are as usual.
- If it is at normal state, the displays of items other than "E0" disappear instantaneously, but if a fault has occurred, the code continues to be displayed. In this case, functions other than power off are invalid.
- When the E4 code lights up, the LED on the Y board blinks (When SW-2 is pressed in this condition, the static memory is reset).

2. THE BUILT-IN TIMER

To display the usage time of the CRT, the timers exclusive for R. G. B. are built in.
A total of 100,000 hours, at the scale of 1000H can be displayed.

3-14. SOPS1008B


RECT
SMOOTHING
SW
CONV. TRANS
RECT
SMOOTHING
OVER CURR.
210V
VOLT DETECT
DRIVER
CONT.
100V
OVER CURR. DETECT
COMP OSC CONTROL C1
VOLT DETECT
REG OUT 210V 100V
DRIVER
OVER VOLT DETECT
LOW VOLTAGE DETECT
ON
Vcc
M1
REG OUT 35V -35V 15.5V -15.5V 5.7V -5.8V 5.0V
SW
CONV. TRANS
RECT
SMOOTHING
OVER CURR. DETECT
COMP OSC CONTROL C2
VOLT DETECT
DRIVER
OVER VOLT DETECT
STOP
ON/OFF
Vcc
SUPPORT POWER
ON/OFF CONTROL
M2

This power source is composed of 2 half bridge converters and 1 self-excited flyback converter. (auxiliary power source.) When the main switch is turned ON, at first the auxiliary power source operates, voltage is supplied to boards C1, C2 of the board M1, and their respective control IC (IC51) operate. At this point, the power source doesn't operate, but instead, ON signal (about 5V) is input from outside, and the power source of board M2 starts operating.

As the power source of board M2 operates, outputting a voltage, a part it is supplied to pin ③ of board C1.
This becomes the ON signal, causing the power source of M1 to start operating.

3-15. CIRCUIT OPERATION OF C2 BOARD (CONTROL BOARD)

Pins ①, ② of IC51 constitute the error amplifier for controlling the output voltage. The output of 5.7V is divided by R71.270, RV2551 and input to pin ①. As reference voltage, the voltage (+5V) that is supplied from pin ⑭ is divided by R62, R63 and is input to pin ②. Pin ④ is for dead time control, and while it is "High", on duty becomes "0".

Since pin ④ remains "High" while ON signal is "Low" (ON signal is input via Q251, 258), power source doesn't operate. Oscillation frequency is determined by pins ⑤, ⑥. Pins ⑧, ⑨, ⑩, ⑪ make the output transistor terminal of IC51, and main transistor is driven via T153, T154.

Pin ⑭ is the reference voltage (5V) output, and pins ⑮, ⑯ make the error amplifier for over-current protection.

The voltage detected by T152 is smoothened out with rectifier L1, C53, by D61, 62, 63; and is then input to pin ⑯.

3-16. CIRCUIT OPERATION OF M2 BOARD

C152, 153, 166, 167, Q151, 152, T151 constitute the half bridge converter. The AC voltage that is output from T151 is rectified by D251, 252, 253, 254, 255, 256, and then smoothened by L251, 252, 253, C265, 266, 267, 268, 270, D276, 277, 278, 279, R261, 263, 265, 266, IC252 constitute the over-current protection circuit. If any of their respective output voltages exceed the reference voltage, pin ① of IC252 turns "High", pin ⑨ connector (M2 board) is input into, D58 turns ON, Q53 turns ON, pin ④ (IC51) turns "High", and the operation halts.

3-17. CIRCUIT OPERATION OF C1 BOARD (CONTROL BOARD)

Operation of this board is identical to that of board C2.

3-18. CIRCUIT OPERATION OF M1 BOARD

C109, 110, 111, 112, Q101, 102, 103, T1013 constitute the half bridge converter. The AC voltage that is output from T101 is rectified by D201, 202, 203, 204, 205, 206, and then smoothened by C201, 202, 213, C214, 215, 216.

Q204, 205, R232, 233, Q206, 207, R234, 235, 236 constitute the over-current protection circuit.

In case of 10V output, if the voltage that is divided by R232, 233 exceeds +5V, Q204 turns ON, "High" signal is input to pin ⑨ (IC1), D58 turns ON, Q53 turns ON, pin ④ (IC51) turns "High", and the operation halts.

IC203, R247, 248, 249, 250, 251 constitute the low voltage protection circuit.

In case of 100V output, the voltage that is divided by R247, 248 is input to pin ⑧ (IC203), making it the reference pin ⑤. When the voltage of pin⑥ becomes lesser than that of pin⑤, "High" is output through pin ⑦, which is then input to pin ③, time is delayed by C227, R241, "High" signal is output through pin ①, which is then conveyed to pin ⑨ of board C2 of the board M2, and the operation halts.

R201, IC201, R217, 218, RV202 constitute the series regulator. And, R208, 209, 210, 212, 213, 214, 215, 254, RV201 constitute the over-current protection circuit.

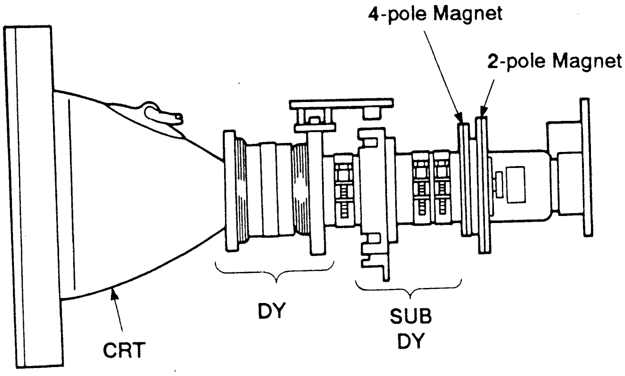
SECTION 4
SET-UP ADJUSTMENTS

Note :

- When exchanging CRT, fit tightly DY to CRT, set neck assembly position and adjust.
- Service mode is released when the power is turned OFF.

4-1. NECK ASSEMBLY INSTALLATION

1. Fit DY tightly to CRT funnel first and then tightly fit Sub DY.
2. Temporary install 2-pole and 4-pole magnet assembly 5-6mm away from left DY.
3. Installing CB board.



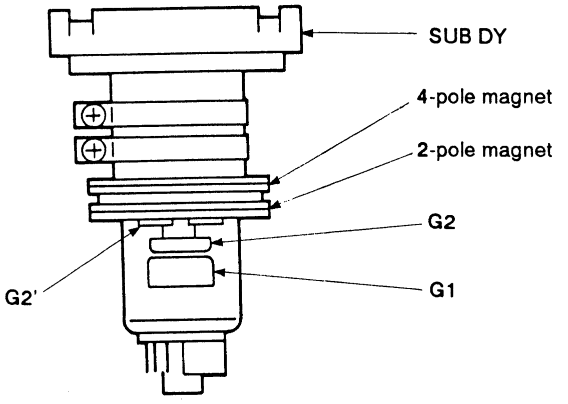
4-2. ADJUSTING SCREEN INCLINATION BY MAIN DY

Note)
Connect the remote commander (RM-1271) which is sold separately, and perform the adjustments.

1. Turn set power ON and remote commander power key ON.
2. Press TEST key for 5sec and then arrow ▲ key to set at serviceman-mode.
3. Press TEST key to display cross-hairs.
4. Turn main DY and adjust screen inclination.
   - When red CRT is exchanged, display green and red cross hair pattern, and match horizontal cross- hair to adjusted green CRT.
   - When green, blue CRT is exchanged, display cross hairs of the exchanged CRT color and the adjusted CRT color, and match horizontal cross-hair to the adjusted CRT.
5. Fix main DY after adjustment.

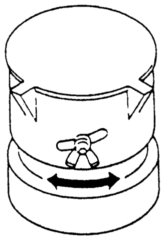
4-3. SUB-DY SETTING

1. Align the 2-pole and the 4-pole magnets with the G2' surface and fix them.
2. Fit the SUB-DY tightly to the 2-pole and the 4-pole magnets and fix it.

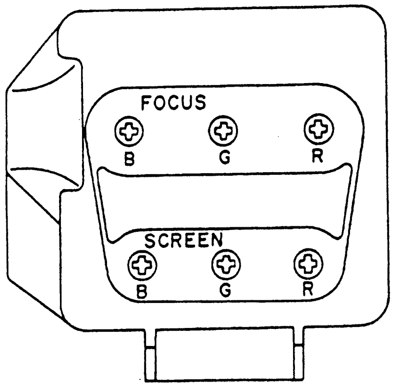


4-4. GREEN FOCUS ADJUSTMENT

1. Input monoscope signal.
2. Press commander CUT-OFF R, B key and cut-off R, B.
3. Turn main green lens and obtain best display on screen.

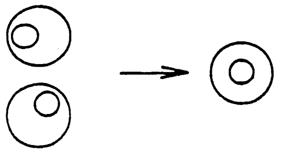


4. Turn focus pack GREEN FOCUS VR and set at best focus point.
5. Turn main green lens and focus screen center and temporary fix lens screw.

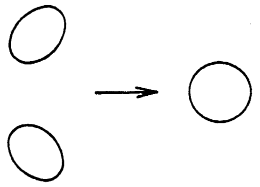


6. Turn Sub-lens and focus screen border. Tighten lens fixing screw.

7. Loosen screw temporarily fixing main green lens. Make fine adjustments and fix lens with fixing screw.
8. Input DOT signals.
9. Turn focus pack GREEN FOCUS VR a little to the left from the just focus point until halation surrounds DOT.
10. Use a 2-pole magnet to bring the DOT core to the center of halation. (Fig. 1)


(Fig. 1)

(2-pole magnet adjustment)


(Fig. 2)

(4-pole magnet adjustment)

11. Turn focus pack GREEN FOCUS VR a little to the right from the just focus point to slightly change DOT shape.
12. Use a 4-pole magnet to make DOT shape circular. (Fig.2)
13. Repeat 9 through 12 for tracking.
14. Turn focus VR and adjust for the best focus.

4-5. RED FOCUS ADJUSTMENT

1. Press Commander CUT-OFF G , B keys and cut-off green and blue.
2. Adjust following green focus adjustment instructions no. 8 to 14.

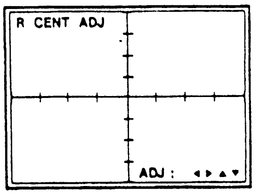
4-6. BLUE FOCUS ADJUSTMENT

1. Press Commander CUT-OFF G , R and cut-off green and red.
2. Follow green focus adjustment instructions nos. 8 to 14.
3. Press Commander INPUT SELECT A and input fH=76KHz R, G, B signals.
4. Press PAGE and set color temperature at 6,500° K.
5. Press GAIN and confirm blue gain data is maximum.
6. Press BIAS and confirm blue bias data is '128.'
7. Press RESET.
8. Press TEST to display H pattern.
9. Press CUT-OFF G , R and cut-off green and red.
10. Adjust focus pack blue focus VR to just focus poin.

4-7. REGISTRATION ADJUSTMENT

Centering Adjustment

1. Press ZONE to display cross-hairs.
2. Press ADJ R when the red CRT is replaced.
3. Use the arrow keys ◀ ▶ ▲ ▼ and align the red center line with the green center line.



Note 1) Zone control mode ① adjust centering.
CENT R and B provide small variation width for users.
CENT R and B become the G centering adjust mode when pressed simultaneously. The variation width is also small.

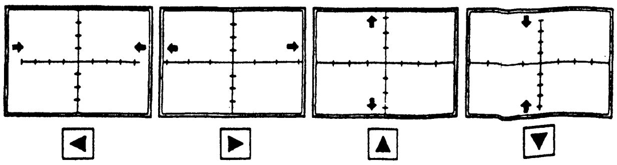
Note 2) When the computer display is shifted, press RGB SHIFT and adjust with arrow keys ◀ ▶ ▲ ▼. Then, press MEMORY. The test signal position dose not shift after pressing TEST.

Note 3) Follow the instructions below when the VIDEO display position is shifted :

① Press ZONE.
② Press ADJ G.
③ Press TEST for minimum 5 seconds to display VIDEO.
Press CUT OFF R and B for G monocolor. Adjust with arrow keys ◀ ▶ ▲ ▼.
④ Press TEST key to display cross-hair.
Press ADJ R.
Match G and R.
⑤ Press ADJ B to match R and B.
⑥ Press NORMAL to macth R and B.
⑦ Press TEST.
Test signal position is shifted.

Size Adjustment

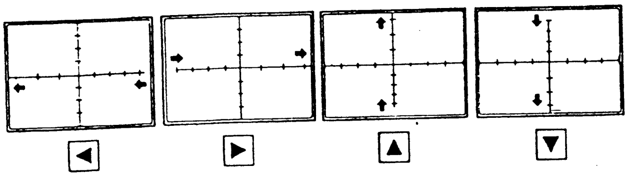
1. Press TEST to display the cross-hairs.
2. Press SIZE for size adjustment mode.
3. Adjust display size against the screen with arrow keys.
4. Match 4 display dimensions.



5. Follow the instructions below when the computer display size is too small or too large. Press RGB SIZE and adjust with arrow keys ◀ ▶ ▲ ▼.
Press MEMORY.
Test signal size is same when pressing TEST.
6. Follow the instructions below when the VIDEO display size is too small or too large.
① Press SIZE.
② Press ADJ G.
③ Press TEST for minimum 5 seconds to display VIDEO. Press CUT-OFF to turn off R and B, and make Green light.
Adjust with arrow keys ◀ ▶ ▲ ▼.
④ Should blanking occur, press BLKG. Press POSITION + or − to select the adjusting position. Adjust with arrow keys ◀ ▶ ▲ ▼.
⑤ Press TEST. The test signal size is not changed.

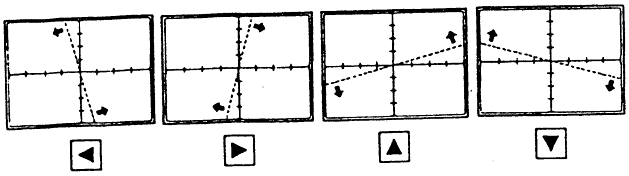
Linearity Adjustment

1. Press LIN and set at linearity adjustment mode.
2. Use arrow keys to adjust vertical and horizontal balance.
3. Adjust in four directions.



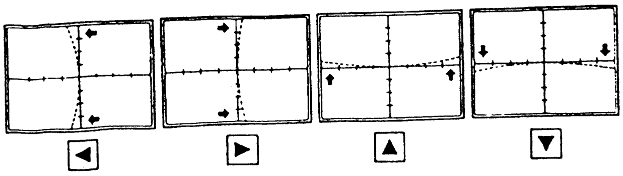
Skew Adjustment

1. Press SKEW and set at skew adjustment mode.
2. Use arrow keys to adjust each center line vertically and hirizontally.



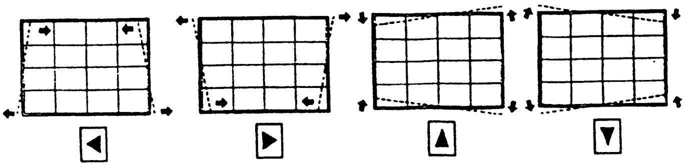
Bow Adjustment

1. Press BOW and set at bow adjustment mode.
2. Use arrow keys to straighten bowing line.



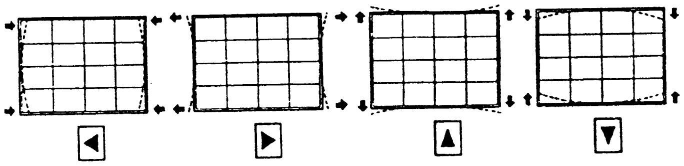
Keystone Adjustment

1. Press KEY and set at keystone adjustment mode.
2. Use arrow keys to adjust trapezoid shape distortions vertically and horizontally.



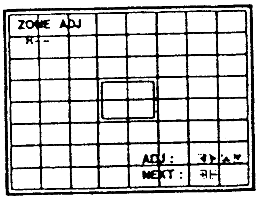
Pincushion Adjustment

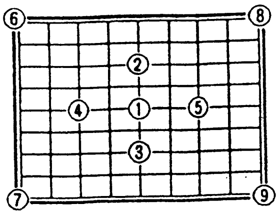
1. Press PIN and set at pin adjustment mode.
2. Use arrow keys to adjust spool shape distortion vertically and horizontally.



Zone Adjustment

1. Press ZONE and set at zone adjustment mode.
2. Press POSITION + and − keys to select part to be adjusted.
3. Use arrow keys ◀ ▶ ▲ ▼ to adjust line distortion near cursor.





4-8. WHITE BALANCE ADJUSTMENT BY MAINTENANCE MAN

<**Preparations**>

① Remove Commander cover.
② Press TEST for more than 5 sec.
③ Screen display will change to service man mode display.
④ Press arrow key ▲.

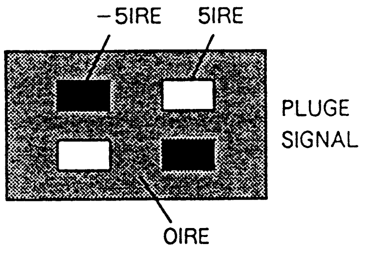
You are now in the service man mode.

1. G2VR Adjustment

① Input VIDEO signal.
② Press PAGE and set color temperature at 6,500° K.
③ Press BIAS and set R, G, B, bias data at
R : "128"
G : "128"
B : "128"
④ Press GAIN and set R, G, B gain data at
R : "192"
G : "197"
B : "208"
⑤ Press RESET
⑥ Press TEST and display pluge signal on screen.

⑥' Short-circuit CF2 board CF2-3 connector (2P) ① − ②.

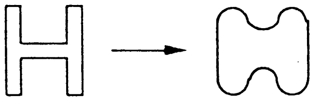
⑦ Adjust R, G and B brightness by turning G2VR as follows.



* Adjust until +5IRE is a little brighter than the background (OIRE), and the background is the same brightness as −5IRE.
⑧ End short-circuiting at ⑥'.

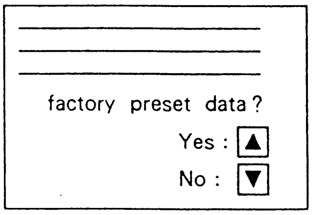
2. Blue G4 Adjustment

① Set at No-Signal state. (To set at fH=34KHz)
② Press PAGE and set color temperature at 6,500° K.
③ Press GAIN and set blue gain data at maximum.
④ Press BIAS and set blue bias data at "128".
⑤ Press RESET.(To set at CONT : 80, BRT : 50)
⑥ Press TEST and display "H" pattern.
⑦ Cut-off green and red.
⑧ Turn focus pack blue focus VR to the right from the just focus point, and set so that 'H' pattern can be distinguished.



3. 9,300° K Adjustment

① Input video signal.(100IRE white)
② Press PAGE and set color temperature at 9,300° K.
③ Press BIAS or GAIN and set at bias adjustment mode.
④ Press arrow keys ◀ and ▶ simultaneously, and confirm the following message is displayed.



factory preset data ?
Yes : ▲
No : ▼

⑤ Press arrow key4 ▲. (This will input factory preset data in memory)
⑥ Press BIAS.
⑦ Press TEST until screen is white signal.
⑧ Set CONT : Minimum, BRT : Minimum.
⑨ Use color analyzer (Minoluta CS-100 or the like) and adjust blue and red so that; x : 0.284±0.015
y : 0.297±0.025.
Do not adjust green bias.
⑩ Press MEMORY.
⑪ Press GAIN.
⑫ Press TEST until screen displays external signal.
⑬ Press RESET and set CONT : 80%, BRT : 50%.
⑭ Use color analyzer and set green and red so that ; x : 0.284 ± 0.015
y : 0.297 ± 0.025
Do not adjust blue gain.
⑮ Press MEMORY.

4-8. WHITE BALANCE ADJUSTMENT BY MAINTENANCE MAN

<Preparations>

① Remove Commander cover.
② Press TEST for more than 5 sec.
③ Screen display will change to service man mode display.
④ Press arrow key ▲.

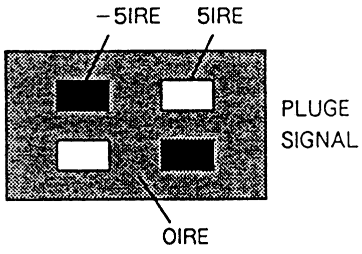
You are now in the service man mode.

1. G2VR Adjustment

① Input VIDEO signal.
② Press PAGE and set color temperature at 6,500° K.
③ Press BIAS and set R, G, B, bias data at
R : "128"
G : "128"
B : "128"
④ Press GAIN and set R, G, B gain data at
R : "192"
G : "197"
B : "208"
⑤ Press RESET
⑥ Press TEST and display pluge signal on screen.

⑥' Short-circuit CF2 board CF2-3 connector (2P) ① – ②.

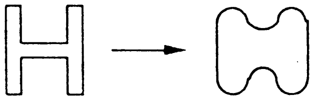
⑦ Adjust R, G and B brightness by turning G2VR as follows.



* Adjust until +5IRE is a little brighter than the background (OIRE), and the background is the same brightness as −5IRE.
⑧ End short-circuiting at ⑥'.

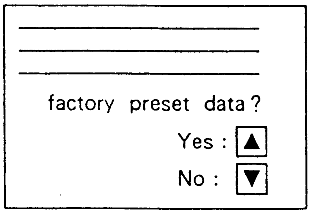
2. Blue G4 Adjustment

① Set at No-Signal state. (To set at fH=34KHz)
② Press PAGE and set color temperature at 6,500° K.
③ Press GAIN and set blue gain data at maximum.
④ Press BIAS and set blue bias data at "128".
⑤ Press RESET.(To set at CONT : 80, BRT : 50)
⑥ Press TEST and display "H" pattern.
⑦ Cut-off green and red.
⑧ Turn focus pack blue focus VR to the right from the just focus point, and set so that 'H' pattern can be distinguished.



3. 9,300° K Adjustment

① Input video signal.(100IRE white)
② Press PAGE and set color temperature at 9,300° K.
③ Press BIAS or GAIN and set at bias adjustment mode.
④ Press arrow keys ◀ and ▶ simultaneously, and confirm the following message is displayed.



factory preset data?
Yes : ▲
No : ▼

⑤ Press arrow key4 ▲. (This will input factory preset data in memory)
⑥ Press BIAS.
⑦ Press TEST until screen is white signal.
⑧ Set CONT : Minimum, BRT : Minimum.
⑨ Use color analyzer (Minoluta CS-100 or the like) and adjust blue and red so that; x : 0.284±0.015
y : 0.297±0.025.
Do not adjust green bias.
⑩ Press MEMORY.
⑪ Press GAIN.
⑫ Press TEST until screen displays external signal.
⑬ Press RESET and set CONT : 80%, BRT : 50%.
⑭ Use color analyzer and set green and red so that ; x : 0.284 ± 0.015
y : 0.297 ± 0.025
Do not adjust blue gain.
⑮ Press MEMORY.

4-8. WHITE BALANCE ADJUSTMENT BY MAINTENANCE MAN

<Preparations>

① Remove Commander cover.
② Press TEST for more than 5 sec.
③ Screen display will change to service man mode display.
④ Press arrow key ▲.

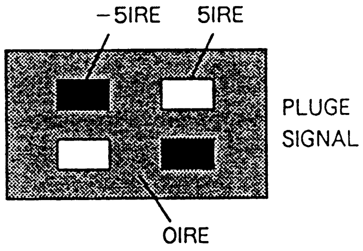
You are now in the service man mode.

1. G2VR Adjustment

① Input VIDEO signal.
② Press PAGE and set color temperature at 6,500° K.
③ Press BIAS and set R, G, B, bias data at
R : "128"
G : "128"
B : "128"
④ Press GAIN and set R, G, B gain data at
R : "192"
G : "197"
B : "208"
⑤ Press RESET
⑥ Press TEST and display pluge signal on screen.

⑥' Short-circuit CF2 board CF2-3 connector (2P) ① − ②.

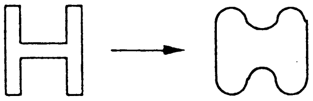
⑦ Adjust R, G and B brightness by turning G2VR as follows.



∗ Adjust until +5IRE is a little brighter than the background (OIRE), and the background is the same brightness as −5IRE.
⑧ End short-circuiting at ⑥'.

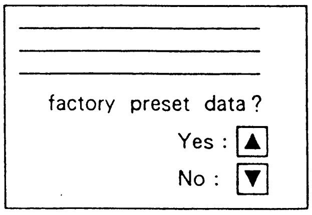
2. Blue G4 Adjustment

① Set at No-Signal state. (To set at fH=34KHz)
② Press PAGE and set color temperature at 6,500° K.
③ Press GAIN and set blue gain data at maximum.
④ Press BIAS and set blue bias data at "128".
⑤ Press RESET.(To set at CONT : 80, BRT : 50)
⑥ Press TEST and display "H" pattern.
⑦ Cut-off green and red.
⑧ Turn focus pack blue focus VR to the right from the just focus point, and set so that 'H' pattern can be distinguished.



3. 9,300° K Adjustment

① Input video signal.(100IRE white)
② Press PAGE and set color temperature at 9,300° K.
③ Press BIAS or GAIN and set at bias adjustment mode.
④ Press arrow keys ◀ and ▶ simultaneously, and confirm the following message is displayed.



factory preset data ?
Yes : ▲
No : ▼

⑤ Press arrow key4 ▲. (This will input factory preset data in memory)
⑥ Press BIAS.
⑦ Press TEST until screen is white signal.
⑧ Set CONT : Minimum, BRT : Minimum.
⑨ Use color analyzer (Minoluta CS-100 or the like) and adjust blue and red so that; x : 0.284±0.015
y : 0.297±0.025.
Do not adjust green bias.
⑩ Press MEMORY.
⑪ Press GAIN.
⑫ Press TEST until screen displays external signal.
⑬ Press RESET and set CONT : 80%, BRT : 50%.
⑭ Use color analyzer and set green and red so that ; x : 0.284 ± 0.015
y : 0.297 ± 0.025
Do not adjust blue gain.
⑮ Press MEMORY.

4-8. WHITE BALANCE ADJUSTMENT BY MAINTENANCE MAN

<**Preparations**>

① Remove Commander cover.
② Press TEST for more than 5 sec.
③ Screen display will change to service man mode display.
④ Press arrow key ▲.

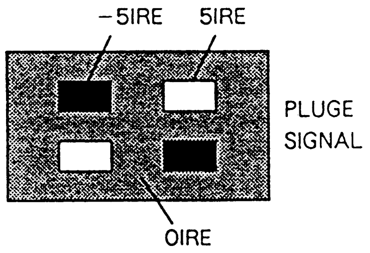
You are now in the service man mode.

1. G2VR Adjustment

① Input VIDEO signal.
② Press PAGE and set color temperature at 6,500° K.
③ Press BIAS and set R, G, B, bias data at
R : "128"
G : "128"
B : "128"
④ Press GAIN and set R, G, B gain data at
R : "192"
G : "197"
B : "208"
⑤ Press RESET
⑥ Press TEST and display pluge signal on screen.

⑥' Short-circuit CF2 board CF2-3 connector (2P) ① – ②.

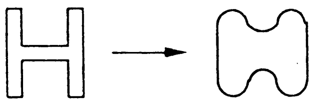
⑦ Adjust R, G and B brightness by turning G2VR as follows.



* Adjust until +5IRE is a little brighter than the background (0IRE), and the background is the same brightness as –5IRE.
⑧ End short-circuiting at ⑥'.

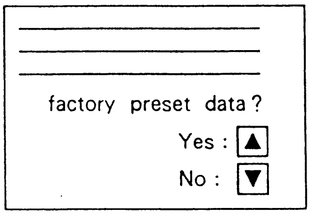
2. Blue G4 Adjustment

① Set at No-Signal state. (To set at fH=34KHz)
② Press PAGE and set color temperature at 6,500° K.
③ Press GAIN and set blue gain data at maximum.
④ Press BIAS and set blue bias data at "128".
⑤ Press RESET.(To set at CONT : 80, BRT : 50)
⑥ Press TEST and display "H" pattern.
⑦ Cut-off green and red.
⑧ Turn focus pack blue focus VR to the right from the just focus point, and set so that 'H' pattern can be distinguished.



3. 9,300° K Adjustment

① Input video signal.(100IRE white)
② Press PAGE and set color temperature at 9,300° K.
③ Press BIAS or GAIN and set at bias adjustment mode.
④ Press arrow keys ◀ and ▶ simultaneously, and confirm the following message is displayed.



factory preset data?
Yes : ▲
No : ▼

⑤ Press arrow key4 ▲. (This will input factory preset data in memory)
⑥ Press BIAS.
⑦ Press TEST until screen is white signal.
⑧ Set CONT : Minimum, BRT : Minimum.
⑨ Use color analyzer (Minoluta CS-100 or the like) and adjust blue and red so that; x : 0.284±0.015
y : 0.297±0.025.
Do not adjust green bias.
⑩ Press MEMORY.
⑪ Press GAIN.
⑫ Press TEST until screen displays external signal.
⑬ Press RESET and set CONT : 80%, BRT : 50%.
⑭ Use color analyzer and set green and red so that : x : 0.284 ± 0.015
y : 0.297 ± 0.025
Do not adjust blue gain.
⑮ Press MEMORY.

4. 6,500° K Adjustment

① Input video signal.
② Press PAGE and set color temperature at 6,500° K.
③ Press BIAS or GAIN and set at bias adjustment mode.
④ Press arrow keys ◀, ▶ simultaneously and confirm the following message is displayed.

factory preset data ?
Yes : ▲
No : ▼

⑤ Press arrow ▲ key.(This will input factory preset data in memory)
⑥ Press BIAS.
⑦ Press TEST until screen is white signal.
⑧ Set CONT : Minimum, BRT : Minimum
⑨ Use color analyzer and adjust green and red so that ; x : 0.313±0.015
y : 0.329 ± 0.015
Do not adjust blue bias.
⑩ Press MEMORY.
⑪ Press GAIN.
⑫ Press TEST until screen displays external signal.
⑬ Press RESET and set CONT : 80%, BRT : 50%.
⑭ Use color analyzer and adjust blue and red so that ; x : 0.313 ± 0.015
y : 0.329±0.015
Do not adjust green gain.
⑮ Press MEMORY.

5. 3,200° K Adjustment

① Input video signal.
② Press PAGE and set color temperature at 3,200° K.
③ Press BIAS or GAIN and set at bias adjustment mode.
④ Press arrow keys ◀, ▶ simultaneously and confirm the following messages are displayed.

factory preset data ?
Yes : ▲
No : ▼

⑤ Press arrow key ▲.(This will input factory preset data in memory)
⑥ Press BIAS.
⑦ Press TEST until screen is white signal.
⑧ Set CONT : Minimum, BRT : Minimum.
⑨ Use color analyzer and adjust blue and red so that ; x : 0.423±0.015
y : 0.399 ± 0.015
Do not adjust green gain.
⑩ Press MEMORY.
⑪ Press GAIN.
⑫ Press TEST until screen displays external signal.
⑬ Push RESET and set CONT : 80, BRT : 50.
⑭ Use color analyzer and adjust red and blue so that ; x : 0.428 ± 0.015
y : 0.399±0.015
Do not adjust green gain.
⑮ Press MEMORY.

6. Preset Adjustment

① Press PAGE and preset color degree.
② Press GAIN and set R, G, B gain data at 6,500° K data.
③ Press BIAS and set R, G, B bias data at 6,500° K data.
④ Press MEMORY.

SECTION 5
SAFETY RELATED ADJUSTMENTS

When exchanging ◪ part check HV hold-down circuit, HV regulation circuit, LOW B protector circuit and beam current protector circuit.

⧗ R33, R34 [HV hold-down] PA board
◪ IC2, Q7, D9, D12, C13, R20, R21, R22, R23, R24, R32, R33, R34, R35, R36, R82, HV BLOCK, PA mount

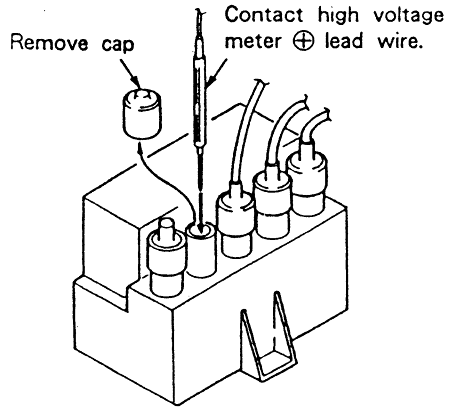
⧗ R41, R42 [HV regulation] PA board
◪ IC1, IC6, IC7, IC8, IC9, D13, C16, R37, R38, R39, R40, R41, R42, R53, R55, R56, R58, R59, R129, X1, HV BLOCK, PA mount, PB mount

⧗ R29, R30 [LOW B protector] PA board
◪ IC1, IC3, IC5, Q8, D4, D5, D10, D11, R9, R10, R26, R28, R29, R30, R31, R88, R95, PA mount

⧗ R1, R4 [Beam current protector] PA board
◪ IC2, IC3, IC5, Q1, Q2, Q7, Q8, D4, D5, D9, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R20, R21, R22, R23, R24, R43, R44, R45, R46, R47, R82, R88, R119, R120, R121, R122, R199 (DA board), PA mount, PB mount

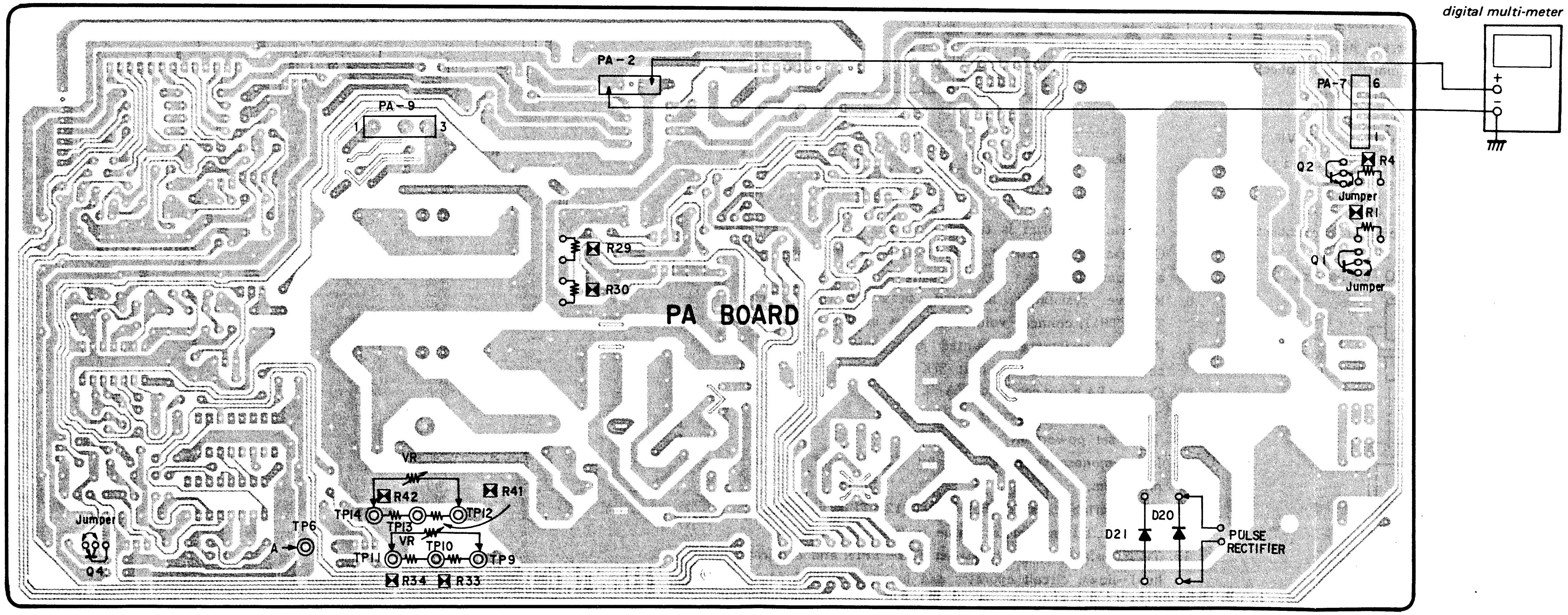
⧗ R33, R34 : HV Hold-down

1. Confirm set power is turned OFF.
2. Connect high voltage meter ⊕ to HV filter vacant terminal and ⊖ to chassis earth.
3. Remove resistance mounted between PA board TP9 – TP11. Connect variable resistor and set at 47K Ω.
4. Remove resistance mounted between PA board TP12 – TP14. Connect variable resistor and set at 27K Ω.
5. Turn RV1 fully counter clockwise.
6. Turn set power ON.
7. Input monoscope signal, and set CONTR and BRT at maximum.
8. Turn variable resistor between TP12 – TP14 to change resistance value and adjust high voltage to around 31.5 ± 0.3KV.
9. Turn variable resistor between TP9 – TP11 to change resistance value, adjust high voltage to around 31.5 ± 0.3KV, and confirm hold-down circuit operates and raster disappears.
10. Turn set power OFF.
11. Remove variable resistor between TP9 – TP11. Measure the volume resistance value and solder on the same amount of resistance to R33, R34.
12. Next, slightly raise volume resistance value between TP12 – TP14.
13. Turn set power ON.
14. Turn variable resistor between TP12 – TP14 again and raise high voltage. Confirm hold-down circuit operates at 31.5 ± 0.3KV and raster disappears.
15. Next, adjust HV regulation.



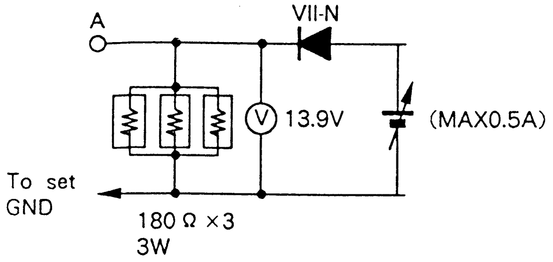
⧗ R41, R42 : HV regulation

1. Confirm set power is OFF.
2. Connect high voltage meter ⊕ to HV filter vacant terminal and ⊖ to chassis earth.
3. Set variable resistor between PA board TP12 – TP14 to 27K Ω.
4. Turn set power ON.
5. Press CUT – OFF key and cut – off R, G, B.
6. Turn variable resistor between TP12 – TP14 to change resistance value and adjust high voltage to around 33.0±0.3KV.
7. Turn set power OFF.
8. Remove variable resistor between TP12 – TP14. Measure the volume resistance value and solder on the same amount of resistance to R41, R42.
9. Turn set power ON.
10. Confirm high voltage meter reads 30.5 ± 0.3KV.
11. Turn set power OFF and remove high voltage meter.



⧓ R29, R30 : LOW B Protector

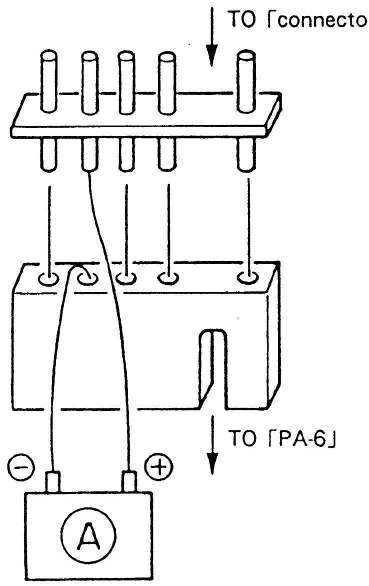
- Prepare jig circuit as shown in figure.
- Adjust until high voltage meter shows 13.9V.



1. Turn set power ON.
2. Contact jig circuit A point to PA board TP6 (12V line) for 0.5–1 sec. and remove immediately. Confirm power turns OFF when doing so.
3. If power does not turn OFF, adjust R29, R39.

⧓ R1, R4 : Beam Current Protector

1. Confirm set power is turned OFF.
2. Disconnect PA board connector PA–6 and connect jig shown in figure.
3. Short circuit PA board Q1 emitter and collector.–
4. Turn set power ON.
5. Input monoscope signal, send beam current by CONTR, BRT and G2VR, and confirm protector circuit operates at under 3500 μA and raster is erased.
6. If protector circuit does not operate, adjust R4.
7. Remove jig short–circuiting Q1 emitter and collector..
8. Next, short–circuit Q4 emitter and collector.
9. . Turn set power ON.
10. Send beam current by CONTR, BRT and G2VR, and confirm protector operates at under 3500 μA and raster is erased.
11. When protector does not operate, adjust R1.
12. .Remove jig short–circuiting Q4 emitter and collector.



To Check without Using High Voltage Meter

⧓ R33, R34 : HV Hold–down

1. Use voltage dividing network shown in figure to calibrate detection unit.

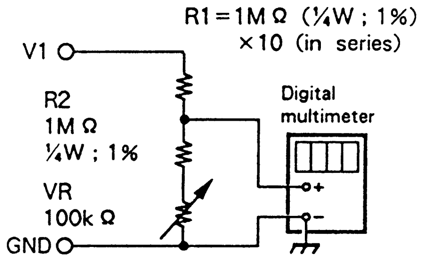
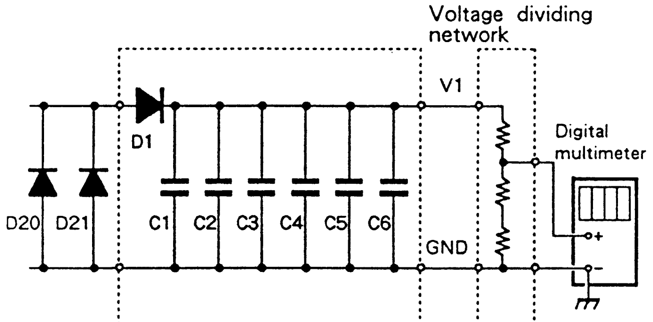


Fig. 1 : Voltage dividing network

2. Remove PA board connector (PA–7) to hold down high voltage. Connect V1 to 100V line of set and read V1 voltage with digital multimeter. Next, adjust volume (VR) so that digital multimeter value is 1/10 of V1.
3. Connect pulse rectifier between PA board D20 or D21 anode and cathode.



Pulse rectifier D1~VII-N
C1~C6~20000P/1.6KV

4. Confirm set power is turned ON.
5. Confirm pulse rectifier and voltage dividing network are connected.
6. Remove resistance mounted between PA board TP9–TP11, connect volume and set at 47K Ω.
7. Remove resistance mounted between TP12–TP14, connect volume and set at 27K Ω.
8. Connect PA board connector (PA-7).
9. Turn RV1 fully counter clockwise.
10. Turn set power ON.
11. Input monoscope signal, and set CONTR and BRT at maximum.
12. Turn variable resistor between TP12–TP14 and adjust until digital multimeter value is 90.0 ± 0.5V DC.
13. Turn variable resistor between TP9–TP11, and confirm hold–down circuit operates and luster is erased when digital multimeter is 90.0 ± 0.5V DC.
14. Turn set power OFF.

15. Remove volume between TP9–TP11. Measure the volume resistance value and solder on the same resistance volume to R33, R34.
16. Slightly raise volume resistance between TP12–TP14.
17. Turn set power ON.
18. Turn volume between TP12–TP14 and confirm hold–down circuit operates and raster is erased when digital multimeter value is 90.0 ± 0.5V DC.
19. Next, adjust HV regulation.

⧓ R41, R42 : HV Regulation

1. Confirm set power is OFF.
2. Set variable resistor between PA board TP12–TP14 at 27K Ω.
3. Turn set power ON.
4. Press CUT–OFF key to cut–off R, G, B.
5. Turn variable resistor between TP12–TP14 and change resistance value. Confirm digital multimeter value is 77.5 ± 0.5V DC.
6. Turn set power OFF.
7. Remove TP12–TP14 variable resistor. Measure the volume resistance value and solder on the same resistance volume to R41, R42.
9. Turn set power ON.
10. Confirm digital multimeter value is 77.5 ± 0.5V DC.
11. Turn set power OFF and remove pulse rectifier.

Confirming +B MAX Voltage

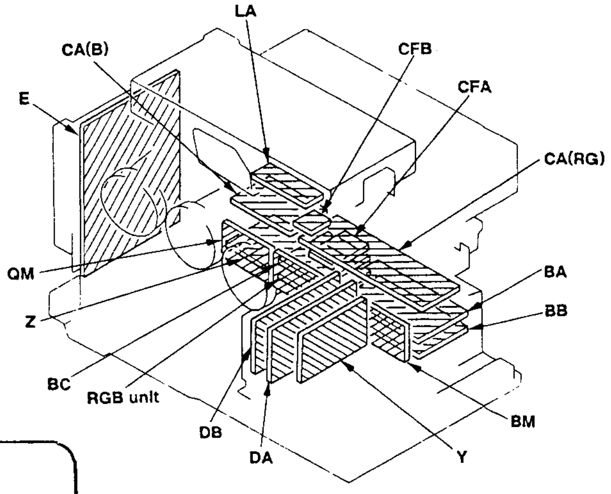
1. Confirm set power is turned OFF.
2. Connect the digital multi-meter between pin ① (or pin ②) and pin ④ (or pin ⑤) of the PA-2 connector on the PA board.
3. Input monoscope signal and turn set power ON.
4. Press CUT–OFF key and cut–off R, G, B.
5. Confirm 100±1V.

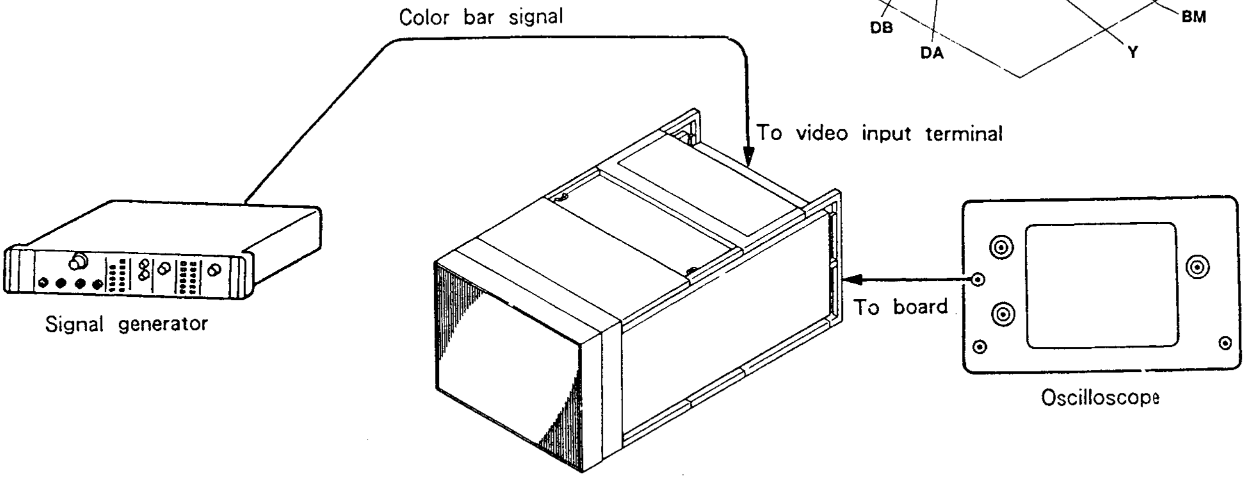
Check after Exchanging Switching Regulator

After exchanging power source block, check that +B MAX voltage is within the standard.

SECTION 6
CIRCUIT ADJUSTMENTS

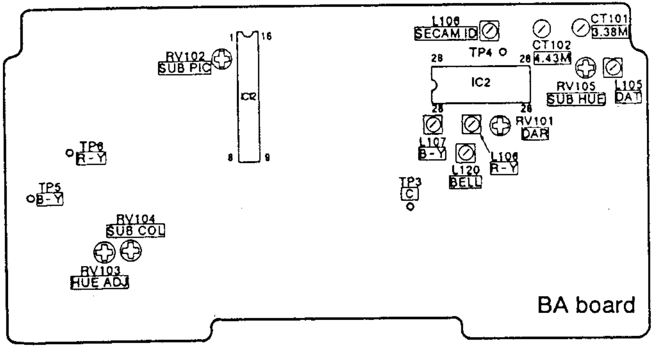
Note :
Fit DY (deflection yoke) tightly to picture tube when conducting basic adjustment, electric adjustment or exchanging picture tube.


LA
CA(B)
CFB
CFA
E
CA(RG)
QM
BA
Z
BB
BC
RGB unit
DB
DA
BM
Y


Color bar signal
To video input terminal
Signal generator
To board
Oscilloscope

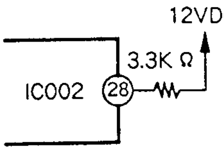
6-1. BA BOARD ADJUSTMENT

(Component side)

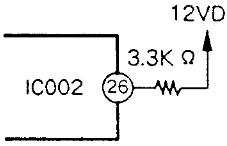

L108
SECAM ID
CT101
3.38M
CT102
4.43M
TP4
28
IC2
RV102
SUB PIC
1
16
IC2
8
9
RV105
SUB HUE
L105
DAT
RV101
DAR
L107
B-Y
L106
R-Y
L120
BELL
TP3
C
TP6
R-Y
TP5
B-Y
RV104
SUB COL
RV103
HUE ADJ
BA board

REF. OSC Adjustment (CT101, CT102)

1. Input PAL color bar.
2. Adjust CT102 so that the display becomes colored.
3. Connect 3.3KΩ to IC002 pin ㉘, apply 12VDC and set at PAL forced MODE.


12VDC
3.3K Ω
IC002
28

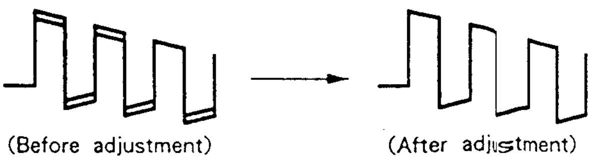
3. Ground IC002 pin ⑰ and turn color-killer OFF.
4. Adjust CT102 until screen movement slows.
5. Disconnect IC002 pin ⑰ grounding.
6. Input NTSC3.58 color bar.
7. Adjust CT101 so that the display becomes colored.
8. Connect 3.3KΩ to IC002 pin ㉖, apply 12VDC and set at NTSC3.58 forced MODE.


12VDC
3.3K Ω
IC002
26

8. Ground IC002 pin ⑰ and turn color-killer OFF.
9. Adjust CT101 until screen movement slows.
10. Disconnect 3.3KΩ connected to IC.
11. Disconnect IC002 pin ⑰ grounding.

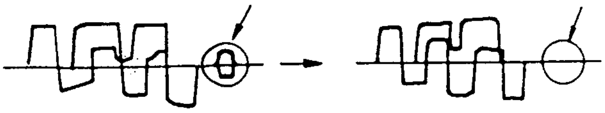
1H DELAY LINE Adjustment

1. Input PAL color bar.
2. Connect oscilloscope to TP-5 and view wave form in H block.


(Before adjustment)
(After adjustment)

3. Connect 3.3K Ω to IC002 pin ㉘, apply 12VDC and set at PAL forced MODE.

4. Adjust L105 and minimize double line part of wave.
5. Input PAL special color bar.
6. Adjust RV101 until wave ANTIPAL part is at 0 – level.



(Before adjustment) (After adjustment)

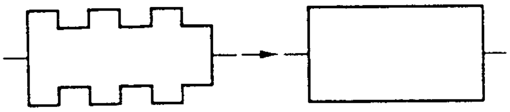
- RV101 and L103 influence each other. Repeat adjustment until both conditions are satisfied.

SECAM ID Adjustment (L108)

1. Input SECAM color bar.
2. Connect 3.3K Ω to IC002 pin ㉘, apply 12VDC and set at PAL forced MODE.
3. Connect digital multimeter to TP4. (input impedance over 50M Ω)
4. Adjust L108 level to maximum.

BELL Filter Adjustment (L120)

1. Input SECAM color bar.
2. Connect 3.3K Ω to IC002 pin ㉘, apply 12VDC and set at PAL forced MODE.
3. Connect oscilloscope to TP3 and view wave form of H block.
4. Adjust L120 until wave is flat.



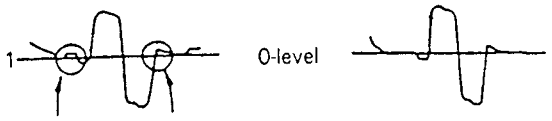
(Before adjustment) (After adjustment)

※ Track L120 and L108

SECAM DISCRI Adjustment (L106, L107)

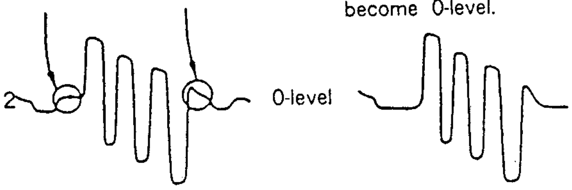
1. Input SECAM color bar.
2. Connect 3.3K Ω to IC002 pin ㉘, apply 12VDC and set at PAL forced MODE.
3. Connect oscilloscope to TP6 and view wave form of H block.

Fig. 1



White and black levels become 0-level.

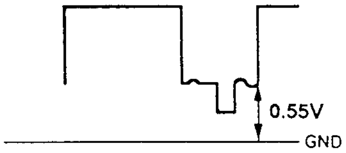
Fig. 2



4. Adjust L106 until white and black part of TP6 wave become 0 – level. (Fig. 1)
5. Connect oscilloscope to TP5 and view wave form of H block.
6. Adjust L107 until white and black part of TP5 wave become 0 – level. (Fig. 2).

SUB BRIGHT Confirment

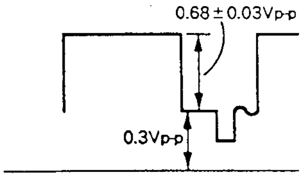
1. Input blank signal (100IRE).
2. Connect oscilloscope to BB board TP5 and view wave form of H block.



3. Confirm pedestal level is 0.55 ± 0.02V.

SUB PICTURE Adjustment (RV102)

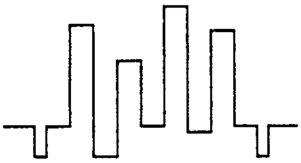
1. Input blank signal (100IRE).
2. Connect oscilloscope to BB board TP5 and view wave form of H block.



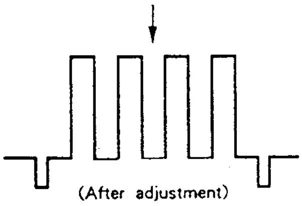
3. Adjust RV102 until pedestal to peak is 0.68±0.03Vp-p.

HUE, SUB COLOR, SUB HUE Adjustment (RV103, RV104, RV105)

1. Input PAL color bar signal.
2. Connect oscilloscope to TP10 and view wave form of H block.
3. Adjust RV103 (HUE) and RV104 (SUB COL) until wave is flat.



(Before adjustment)

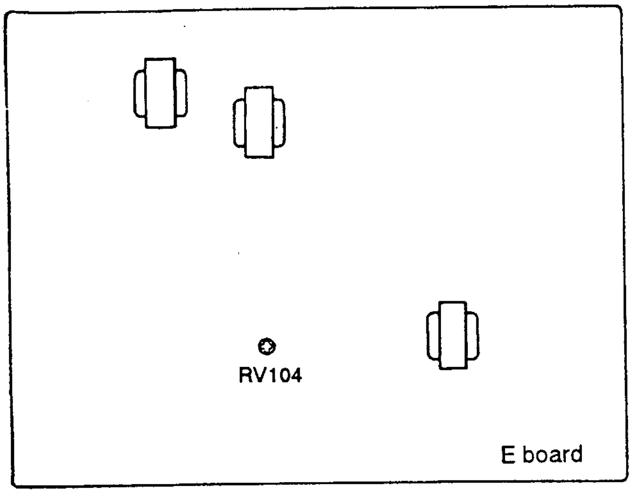


(After adjustment)

4. Input NTSC3.58 color bar.
5. Adjust RV105 (SUB HUE) until wave is flat.

6-2. E BOARD ADJUSTMENT

(Component side)

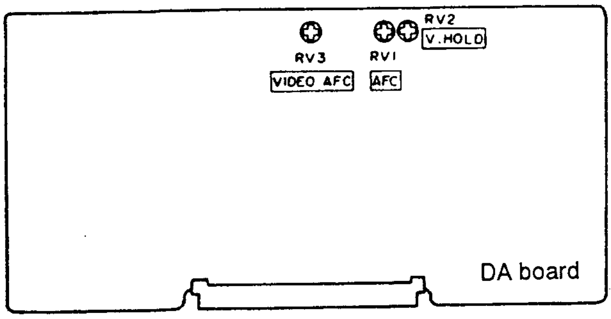


H.SIZE Adjustment (RV104)

1. Input monoscope signal.
2. Press remote commander [SIZE] key, and then arrow key ▶ to set H. SIZE at maximum.
3. Turn RV104 and adjust to frame 15.

6-3. DA BOARD ADJUSTMENT

(Component side)



AFC Adjustment (RV1)

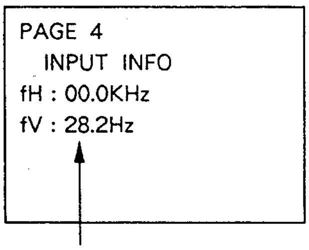
1. Input approximately 30KHz R, G, B signal.
2. Turn RV1 full clockwise.
3. Press S1 (HD OFF) switch and set at image free running state.
4. Turn RV1 counter clockwise a little at a time and stop image.
5. Connect TP2 to frequency counter.
6. Read frequency counter indicated value while pressing S1 switch.
   The value is f1.
7. Turn RV1 full counter clockwise.
8. Press S1 switch and set at image free running state.
9. Turn RV1 to clockwise a little at a time and stop image.
10. Read frequency counter indicated value while pressing S1 switch.
    The value is f2.
11. Adjust $\frac{f1+f2}{2}$ ±200Hz value with RV1.

Video AFC Adjustment (RV3)

1. Input video signal.(fH = 15.75KHz, FV = 60Hz)
2. Turn RV3 (video AFC) full clockwise.
3. Press S1 (HD OFF) switch and set at image free running state.
4. Turn RV3 to left a little at a time and stop image.
5. Connect frequency counter to TP2.
6. Read frequency counter indicated value while pressing S1 switch.
   The value is f1.
7. Turn RV3 full counter clockwise.
8. Press S1 and set at image free running state.
9. Turn RV3 right a little at a time and stop image.
10. Read frequency counter indicated value while pressing S1.
    The value is f12.
11. Adjust to $\frac{f1+f2}{2}$ ±200Hz with RV3.

V HOLD Adjustment (RV2)

1. Set at No-signal state.
2. Press remote commander PAGE key and display PAGE4.
3. Press S2 (V SYNC OFF).
4. Adjust until screen display fV is 28.0±0.1Hz with RV2 (V HOLD).

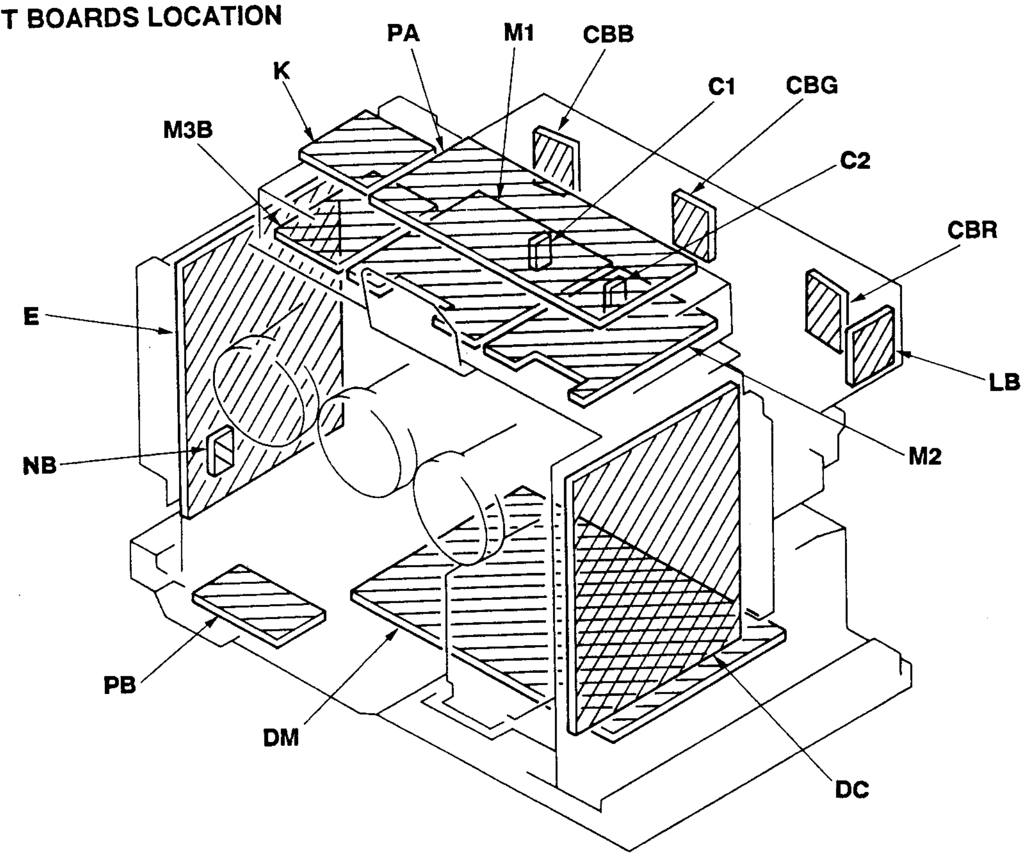

PAGE 4
INPUT INFO
fH : 00.0KHz
fV : 28.2Hz

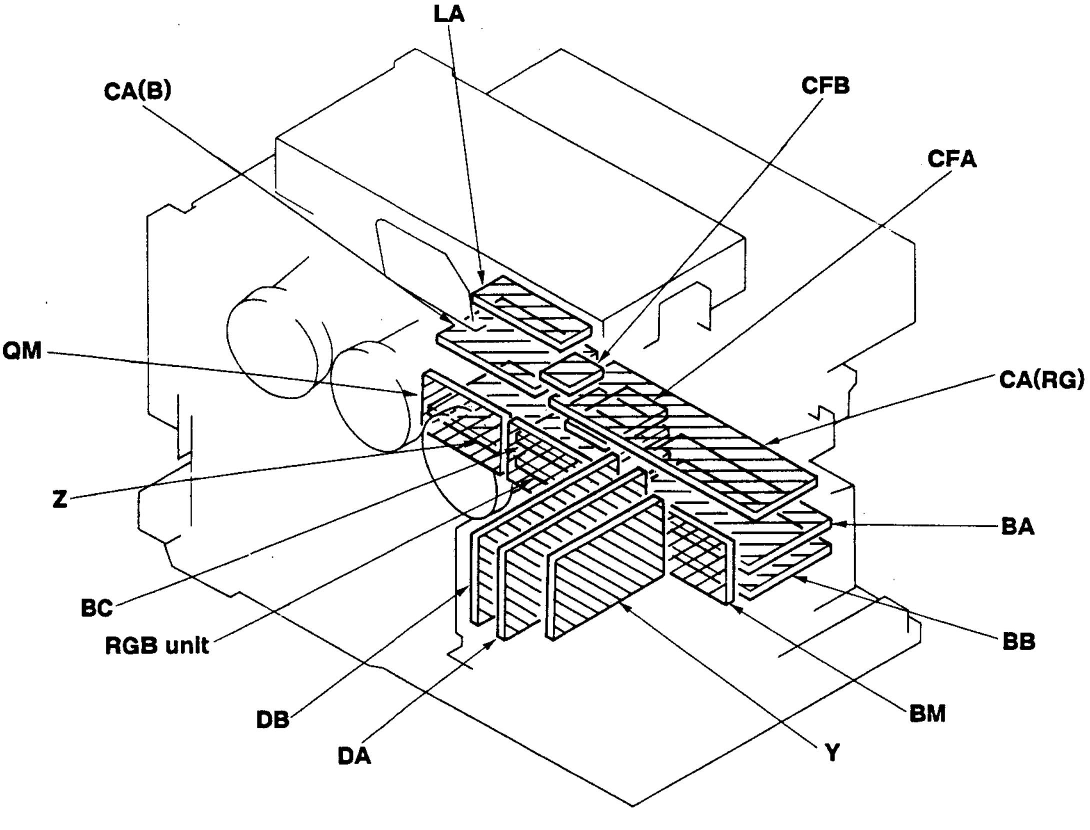
Adjust to RV2 28.0±0.1Hz

MEMO

SECTION 7
DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION


PA
M1
CBB
K
C1
CBG
M3B
C2
CBR
E
LB
M2
NB
PB
DM
DC


LA
CA(B)
CFB
CFA
QM
CA(RG)
Z
BA
BC
RGB unit
BB
DB
BM
DA
Y

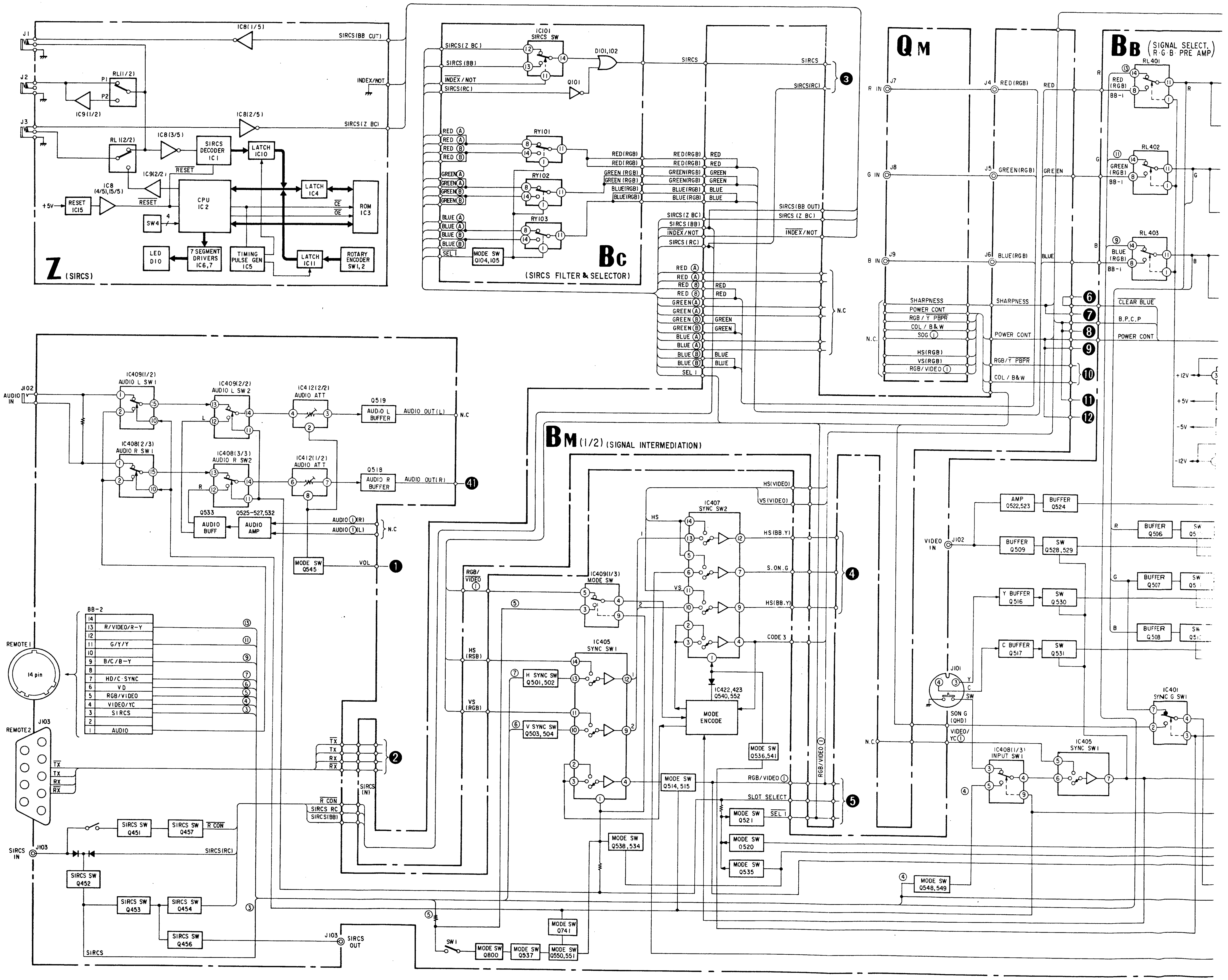
7-2. QUICK REFERENCE

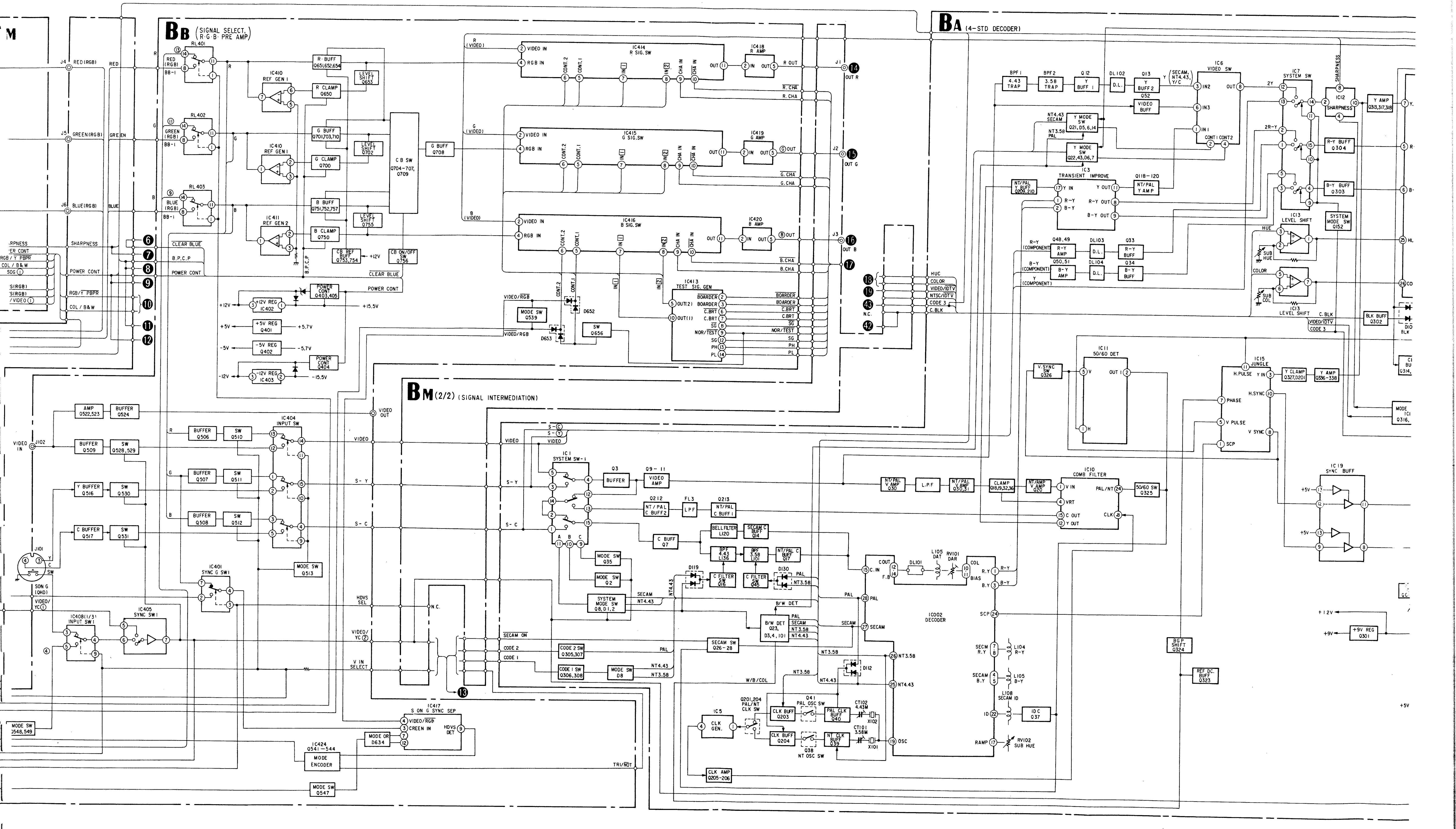
BOARD ITEM	BA	BB	BC	BM	QM	CA(B)	CA(RG)	CBR	CBG	CBB
CIRCUIT BOARD GUIDE TO OPERATION	103	107	126	–	–	111	111	–	–	–
ADJUSTMENT	141	–	–	–	–	–	–	–	–	–
BLOCK DIAGRAM	150	148	148	147	148	159	159	159	159	159
PRINTED WIRING BOARD	177	190	221	197	200	215	208	227	227	228
SCHEMATIC DIAGRAM	167	182	218	192	195	212	202	225	225	226
ELECTRICAL PARTS LIST	333	338	332	332	344	348	346	344	345	345

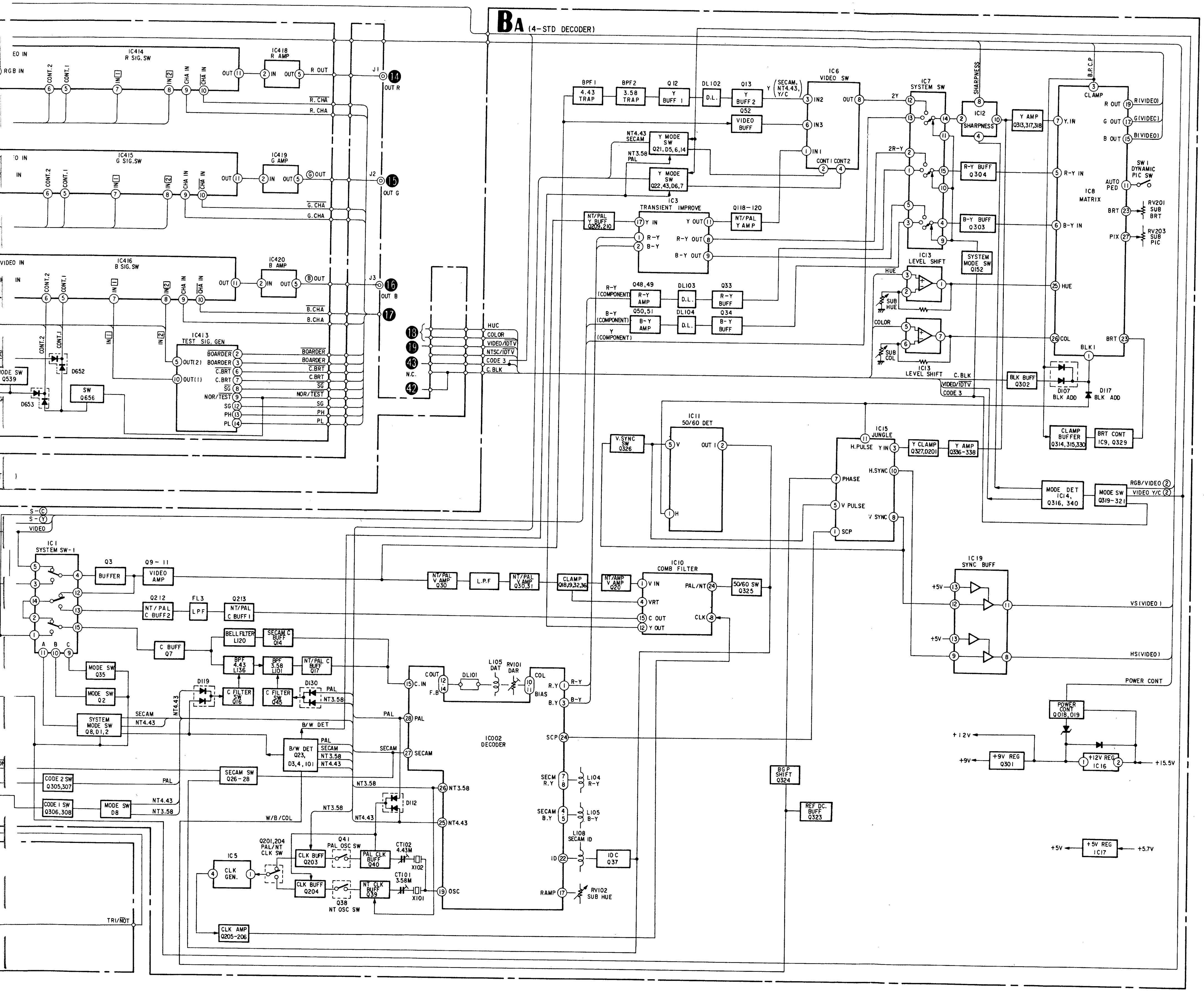
BOARD ITEM	CFA	CFB	DA	DB	DC	DM	E	LA	LB	NB
CIRCUIT BOARD GUIDE TO OPERATION	–	–	112	115	117	–	123	129	–	–
ADJUSTMENT	–	–	143	–	–	–	143	–	–	–
BLOCK DIAGRAM	159	159	154	155	156	152	157	158	156	152
PRINTED WIRING BOARD	231	232	237	266	277	285	302	222	223	224
SCHEMATIC DIAGRAM	229	230	242	261	270	280	296	219	219	220
ELECTRICAL PARTS LIST	346	345	350	356	363	350	359	368	369	344

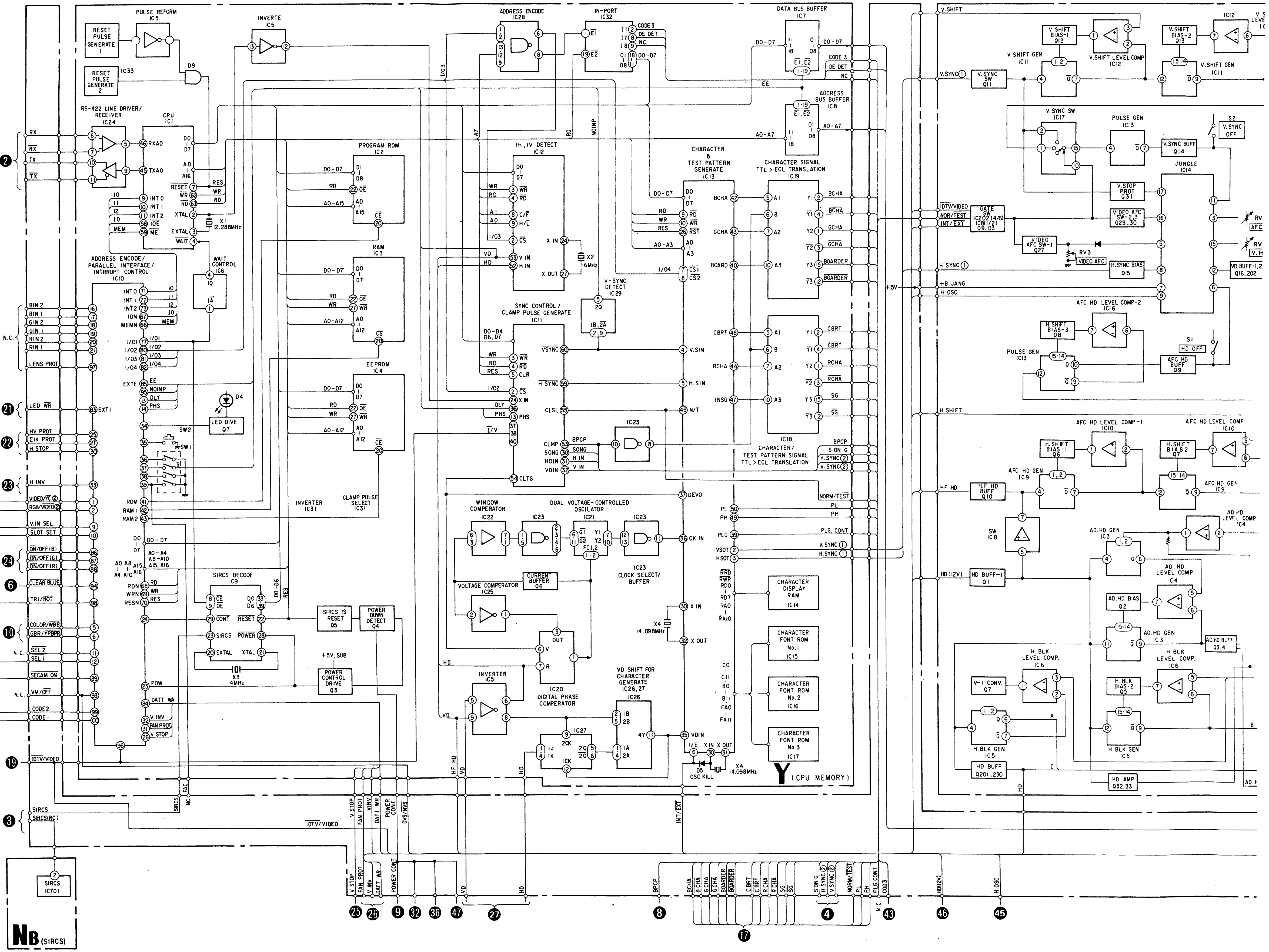
BOARD ITEM	K	PA	PB	Y	Z	C1	C2	M1	M2	M3B
CIRCUIT BOARD GUIDE TO OPERATION	118	120	120	119	128	131	131	131	131	–
ADJUSTMENT	–	–	–	–	–	–	–	–	–	–
BLOCK DIAGRAM	158	158	160	152	147	157	158	157	158	157
PRINTED WIRING BOARD	290	288	290	257	306	317	323	315	321	317
SCHEMATIC DIAGRAM	294	292	292	247	309	313	319	312	318	312
ELECTRICAL PARTS LIST	367	342	342	369	371	374	376	372	375	–

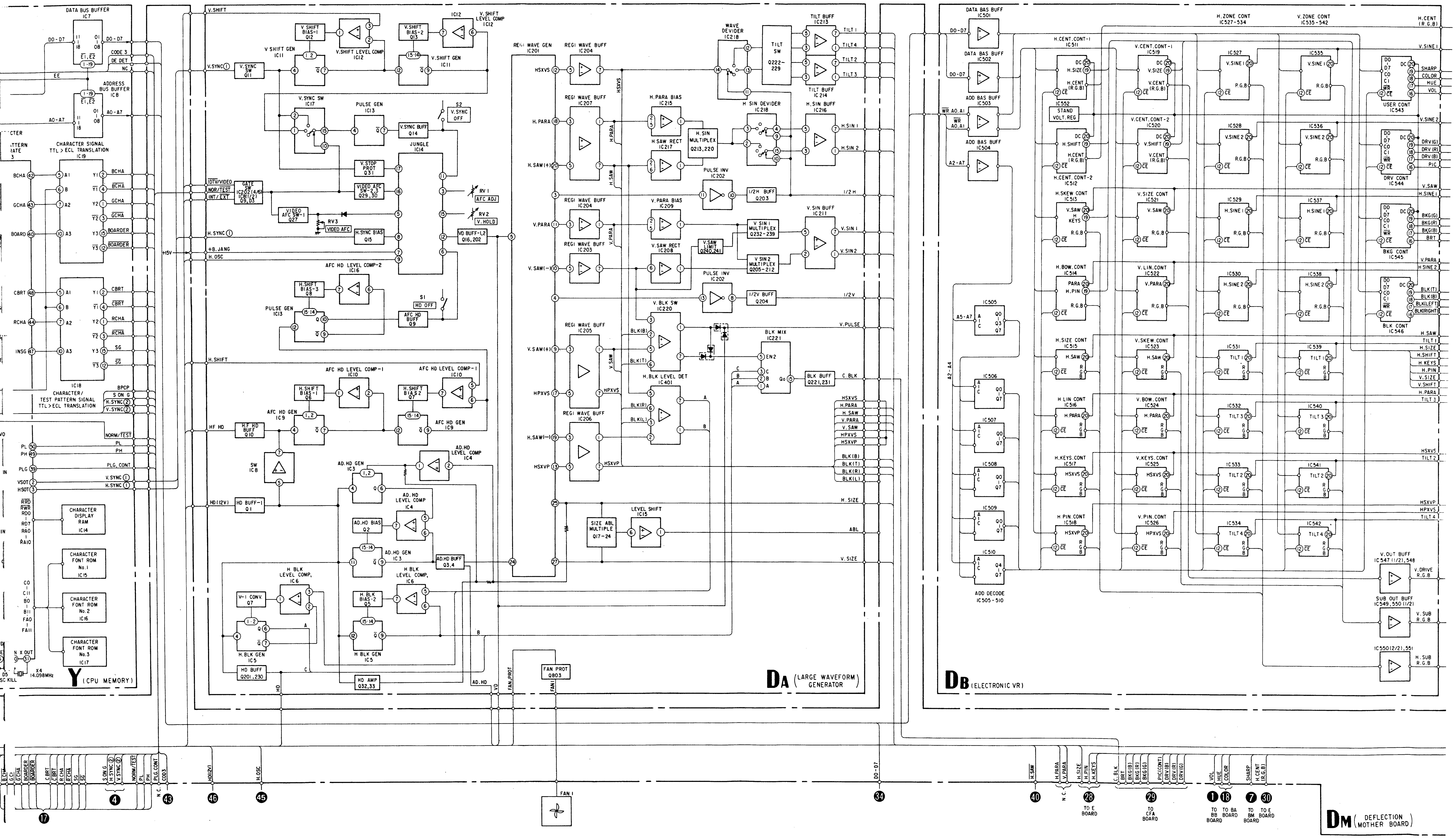
7-3. BLOCK DIAGRAMS

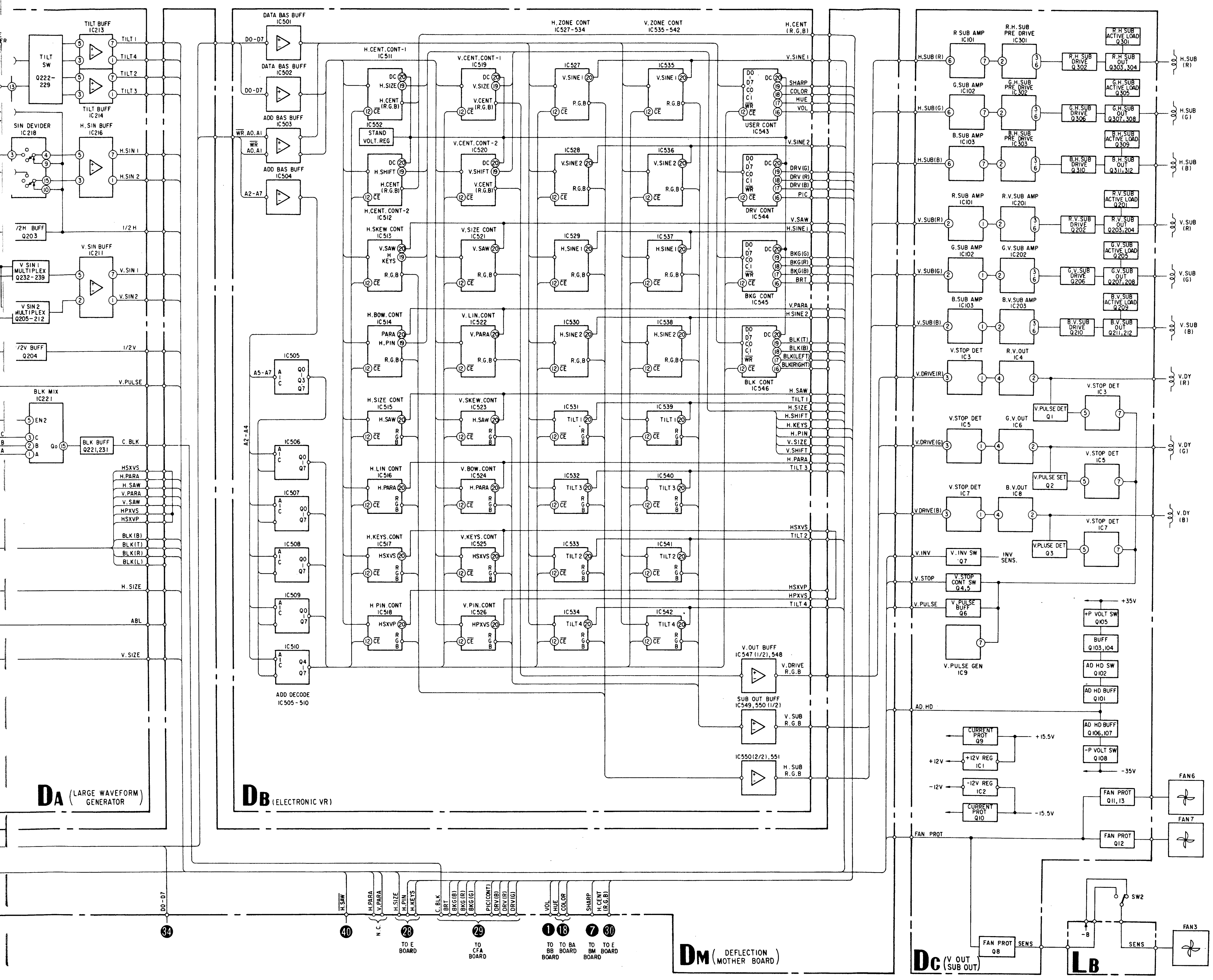

Z (SIRCS)
J1
J2
J3
IC8(1/5)
SIRCS(BB OUT)
RL1(1/2)
P1
P2
IC9(1/2)
INDEX/NOT
IC8(2/5)
SIRCS(Z BC)
RL1(2/2)
IC8(3/5)
SIRCS DECODER IC1
LATCH IC10
IC9(2/2)
RESET
IC8 (4/5),(5/5)
+5V
RESET IC15
CPU IC2
LATCH IC4
ROM IC3
CE
OE
SW4
LED D10
7 SEGMENT DRIVERS IC6,7
TIMING PULSE GEN IC5
LATCH IC11
ROTARY ENCODER SW1,2
Bc (SIRCS FILTER & SELECTOR)
IC101 SIRCS SW
SIRCS(Z BC)
SIRCS(BB)
INDEX/NOT
SIRCS(RC)
D101,102
Q101
SIRCS
RY101
RY102
RY103
RED(RGB)
GREEN(RGB)
BLUE(RGB)
MODE SW Q104,105
SEL 1
SIRCS(BB OUT)
N.C
QM
R IN J7
G IN J8
B IN J9
J4 RED(RGB)
J5 GREEN(RGB)
J6 BLUE(RGB)
SHARPNESS
POWER CONT
RGB/Y PBPR
COL/B&W
SOG
HS(RGB)
VS(RGB)
RGB/VIDEO
BB (SIGNAL SELECT, R·G·B PRE AMP)
RL401
RL402
RL403
BB-1
CLEAR BLUE
B.P.C.P
+12V
+5V
-5V
-12V
❸
❻
❼
❽
❾
❿
⓫
⓬
J102 AUDIO IN
IC409(1/2) AUDIO L SW1
IC409(2/2) AUDIO L SW2
IC412(2/2) AUDIO ATT
Q519 AUDIO L BUFFER
AUDIO OUT(L)
IC408(2/3) AUDIO R SW1
IC408(3/3) AUDIO R SW2
IC412(1/2) AUDIO ATT
Q518 AUDIO R BUFFER
AUDIO OUT(R)
41
Q533 AUDIO BUFF
Q525-527,532 AUDIO AMP
AUDIO 1(XR)
AUDIO 1(XL)
MODE SW Q545
VOL
❶
BB-2
R/VIDEO/R-Y
G/Y/Y
B/C/B-Y
HD/C SYNC
VD
RGB/VIDEO
VIDEO/YC
SIRCS
AUDIO
REMOTE1
14 pin
REMOTE2 J103
TX
RX
❷
R CON
SIRCS RC
SIRCS(BB)
SIRCS (IN)
SIRCS SW Q451
SIRCS SW Q457
SIRCS IN J103
SIRCS(RC)
SIRCS SW Q452
SIRCS SW Q453
SIRCS SW Q454
SIRCS SW Q456
J103 SIRCS OUT
BM (1/2) (SIGNAL INTERMEDIATION)
HS(VIDEO)
VS(VIDEO)
IC407 SYNC SW2
HS(BB.Y)
S.ON.G
HS(BB.Y)
CODE 3
❹
IC409(1/3) MODE SW
RGB/VIDEO
IC405 SYNC SW1
HS (RGB)
VS (RGB)
H SYNC SW Q501,502
V SYNC SW Q503,504
IC422,423 Q540,552
MODE ENCODE
MODE SW Q536,541
MODE SW Q514,515
SLOT SELECT
MODE SW Q521
MODE SW Q520
MODE SW Q535
MODE SW Q538,534
❺
SW1
MODE SW Q800
MODE SW Q537
MODE SW Q550,551
MODE SW Q741
AMP Q522,523
BUFFER Q524
VIDEO IN J102
BUFFER Q509
SW Q528,529
Y BUFFER Q516
SW Q530
C BUFFER Q517
SW Q531
BUFFER Q506
BUFFER Q507
BUFFER Q508
J101
SON G (QHD)
VIDEO/YC
IC408(1/3) INPUT SW1
IC405 SYNC SW1
IC401 SYNC G SW1
MODE SW Q548,549

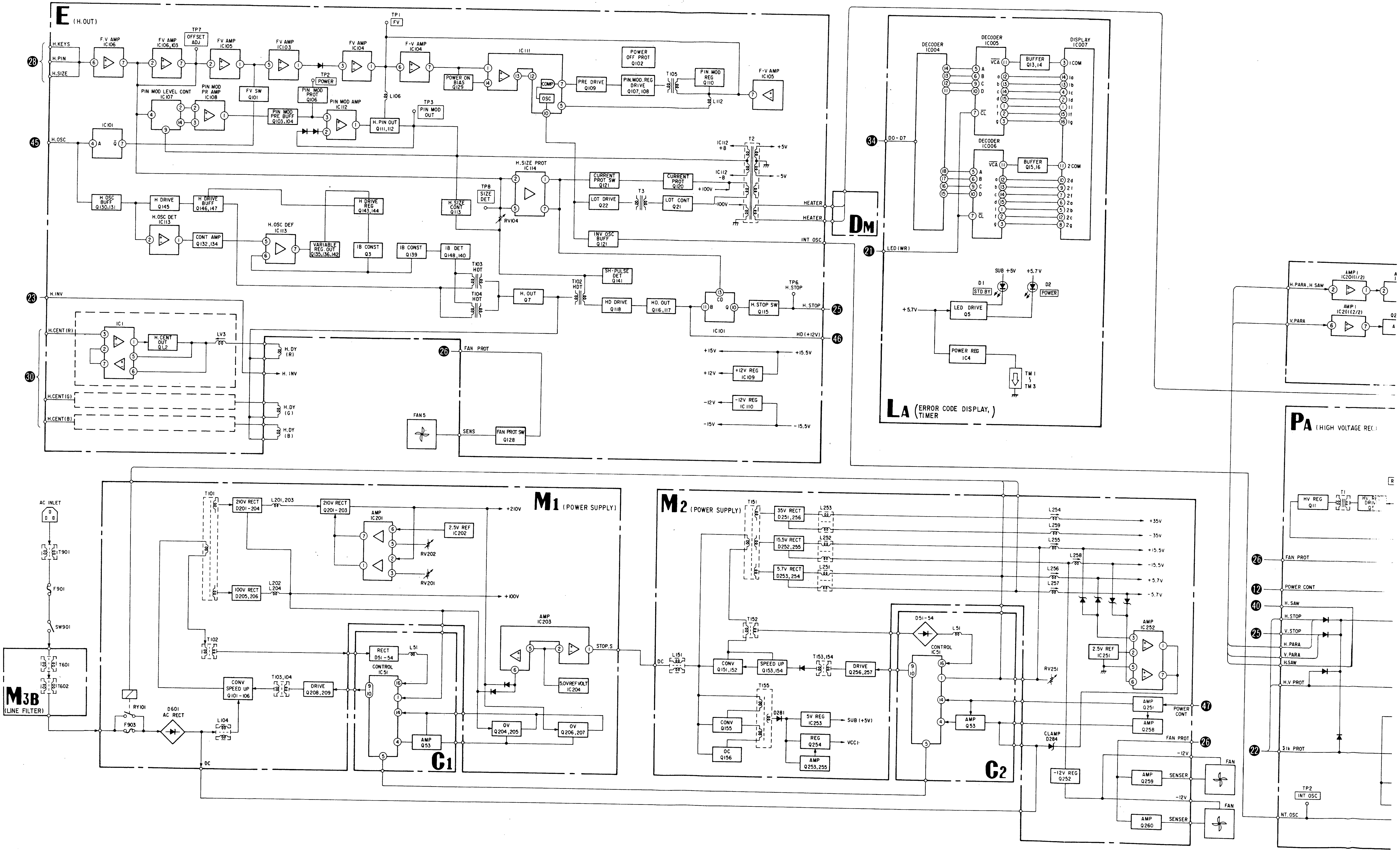

BB (SIGNAL SELECT, R·G·B PRE AMP)
BM(2/2) (SIGNAL INTERMEDIATION)
BA (4-STD DECODER)
J4 RED(RGB)
J5 GREEN(RGB)
J6 BLUE(RGB)
RL401
RL402
RL403
IC410 REF GEN I
IC411 REF GEN 2
R BUFF Q651,652,654
R CLAMP Q650
LEVEL SHIFT Q653
G BUFF Q701,703,710
G CLAMP Q700
LEVEL SHIFT Q702
B BUFF Q751,752,757
B CLAMP Q750
LEVEL SHIFT Q755
CB REF BUFF Q753,754
C B SW Q704-707, Q709
CB ON/OFF SW Q756
G BUFF Q708
IC414 R SIG. SW
IC415 G SIG. SW
IC416 B SIG. SW
IC418 R AMP
IC419 G AMP
IC420 B AMP
IC413 TEST SIG. GEN
OUT R
OUT G
OUT B
CLEAR BLUE
B.P.C.P
POWER CONT
POWER CONT Q403,405
+12V REG IC402
+5V REG Q401
-5V REG Q402
-12V REG IC403
POWER CONT Q404
MODE SW Q539
SW Q656
D652
D653
VIDEO/RGB
SHARPNESS
RGB/Y PBPR
COL / B&W
SOG
AMP Q522,523
BUFFER Q524
VIDEO OUT
VIDEO IN J102
BUFFER Q509
SW Q528,529
BUFFER Q506
SW Q510
BUFFER Q507
SW Q511
BUFFER Q508
SW Q512
Y BUFFER Q516
SW Q530
C BUFFER Q517
SW Q531
IC404 INPUT SW
MODE SW Q513
IC401 SYNC G SW1
IC408(1/3) INPUT SW1
IC405 SYNC SW1
J101
SON G (GHD)
VIDEO/YC
HDVS SEL
V IN SELECT
SECAM ON
CODE 2
CODE 1
IC417 S ON G SYNC SEP
MODE OR D634
IC424 Q541-544 MODE ENCODER
MODE SW Q547
MODE SW Q548,549
TRI/NOT
IC1 SYSTEM SW-1
Q3 BUFFER
Q9-11 VIDEO AMP
Q212 NT/PAL C BUFF2
FL3 LPF
Q213 NT/PAL C BUFF1
C BUFF Q7
MODE SW Q35
MODE SW Q2
SYSTEM MODE SW Q8, D1, 2
BELL FILTER L120
SECAM C BUFF Q14
BPF 4.43 L136
BPF 3.58 L101
NT/PAL C BUFF Q17
C FILTER SW Q16
C FILTER SW Q45
D119
D130
B/W DET Q23, D3,4,101
SECAM SW Q26-28
CODE 2 SW Q305,307
CODE 1 SW Q306,308
MODE SW D8
W/B/COL
IC5 CLK GEN.
Q201,204 PAL/NT CLK SW
CLK BUFF Q203
CLK BUFF Q204
Q41 PAL OSC SW
PAL CLK BUFF Q40
NT CLK BUFF Q39
Q38 NT OSC SW
CT102 4.43M X102
CT101 3.58M X101
CLK AMP Q205-206
D112
IC002 DECODER
DL101
L105 DAT
RV101 DAR
L104 R-Y
L105 B-Y
L108 SECAM ID
IDC Q37
RV102 SUB HUE
BPF1 4.43 TRAP
BPF2 3.58 TRAP
Q12 Y BUFF 1
DL102 D.L.
Q13 Y BUFF 2
Q52 VIDEO BUFF
IC6 VIDEO SW
Y MODE SW Q21, D5,6,14
Y MODE SW Q22,43, D6,7
IC3 TRANSIENT IMPROVE
NT/PAL Y BUFF Q209,210
Q118-120 NT/PAL Y AMP
Q48,49 R-Y AMP
Q50,51 B-Y AMP
DL103 D.L.
DL104 D.L.
Q33 R-Y BUFF
Q34 B-Y BUFF
R-Y (COMPONENT)
B-Y (COMPONENT)
Y (COMPONENT)
HUC
COLOR
VIDEO/IDTV
NTSC/IDTV
CODE 3
C.BLK
IC7 SYSTEM SW
IC12 SHARPNESS
Y AMP Q313,317,318
R-Y BUFF Q304
B-Y BUFF Q303
SYSTEM MODE SW Q152
IC13 LEVEL SHIFT
SUB HUE
SUB COL
BLK BUFF Q302
IC11 50/60 DET
V.SYNC SW Q326
IC15 JUNGLE
Y CLAMP Q327, D201
Y AMP Q336-338
IC10 COMB FILTER
50/60 SW Q325
NT/PAL V AMP Q30
L.P.F
NT/PAL V AMP Q30,31
CLAMP Q18,19,32,36
NT/AMP V AMP Q20
IC19 SYNC BUFF
BGP SHIFT Q324
REF DC BUFF Q323
+9V REG Q301


BA (4-STD DECODER)
IC414 R SIG. SW
IC418 R AMP
R OUT
J1 ⑭ OUT R
R. CHA
IC415 G SIG. SW
IC419 G AMP
J2 ⑮ OUT G
G. CHA
IC416 B SIG. SW
IC420 B AMP
J3 ⑯ OUT B
⑰
B. CHA
IC413 TEST SIG. GEN
BOARDER
C.BRT
NOR/TEST
SG
PH
PL
D652
D653
SW Q656
HUC
COLOR
VIDEO/IDTV
NTSC/IDTV
CODE 3
C.BLK
N.C.
BPF1 4.43 TRAP
BPF2 3.58 TRAP
Q12 Y BUFF 1
DL102 D.L.
Q13 Y BUFF 2
Q52 VIDEO BUFF
Y (SECAM, NT4.43, Y/C)
IC6 VIDEO SW
Y MODE SW Q21, D5, 6, 14
Y MODE SW Q22, 43, D6, 7
NT/PAL Y BUFF Q209, 210
IC3 TRANSIENT IMPROVE
Q118-120 NT/PAL Y AMP
R-Y (COMPONENT) Q48, 49 R-Y AMP
DL103 D.L.
Q33 R-Y BUFF
B-Y (COMPONENT) Q50, 51 B-Y AMP
DL104 D.L.
Q34 B-Y BUFF
Y (COMPONENT)
IC7 SYSTEM SW
2Y
2R-Y
SHARPNESS
IC12 SHARPNESS
Y AMP Q313, 317, 318
R-Y BUFF Q304
B-Y BUFF Q303
SYSTEM MODE SW Q152
IC13 LEVEL SHIFT
HUE
SUB HUE
COLOR
SUB COL
B.P.C.P
CLAMP
R OUT G OUT B OUT
R(VIDEO) G(VIDEO) B(VIDEO)
IC8 MATRIX
Y. IN
R-Y IN
B-Y IN
SW1 DYNAMIC PIC SW
AUTO PED
BRT
PIX
RV201 SUB BRT
RV203 SUB PIC
HUE
COL
BLK1
BRT
BLK BUFF Q302
D107 BLK ADD
D117 BLK ADD
CLAMP BUFFER Q314, 315, 330
BRT CONT IC9, Q329
IC11 50/60 DET
V. SYNC SW Q326
IC15 JUNGLE
H. PULSE
Y IN
H. SYNC
PHASE
V PULSE
V SYNC
SCP
Y CLAMP Q327, D201
Y AMP Q336-338
MODE DET IC14, Q316, 340
MODE SW Q319-321
RGB/VIDEO
VIDEO Y/C
IC19 SYNC BUFF
+5V
VS(VIDEO)
HS(VIDEO)
POWER CONT
POWER CONT Q018, 019
+12V
+9V REG Q301
+12V REG IC16
+15.5V
+9V
+5V REG IC17
+5V
+5.7V
S-C
S-Y
VIDEO
IC1 SYSTEM SW-1
Q3 BUFFER
Q9-11 VIDEO AMP
Q212 NT/PAL C BUFF 2
FL3 LPF
Q213 NT/PAL C BUFF 1
NT/PAL V AMP Q30
L.P.F
NT/PAL V AMP Q30, 31
CLAMP Q18, 19, 32, 36
NT/AMP V AMP Q20
IC10 COMB FILTER
V IN
VRT
C OUT
Y OUT
PAL/NT
CLK
50/60 SW Q325
C BUFF Q7
BELL FILTER L120
SECAM C BUFF Q14
BPF 4.43 L136
BPF 3.58 L101
NT/PAL C BUFF Q17
D119
D130
C FILTER SW Q16
C FILTER SW Q45
MODE SW Q35
MODE SW Q2
SYSTEM MODE SW Q8, D1, 2
SECAM
NT4.43
NT3.58
PAL
B/W DET
B/W DET Q23, D3, 4, 101
SECAM SW Q26-28
CODE 2 SW Q305, 307
CODE 1 SW Q306, 308
MODE SW D8
W/B/COL
D112
COUT
DL101
L105 DAT
RV101 DAR
COL
BIAS
C. IN
F.B
R.Y
B.Y
R-Y
B-Y
IC002 DECODER
SCP
SECM R.Y
L104 R-Y
SECAM B.Y
L105 B-Y
L108 SECAM ID
ID
IDC Q37
RAMP
RV102 SUB HUE
OSC
IC5 CLK GEN.
Q201, 204 PAL/NT CLK SW
CLK BUFF Q203
CLK BUFF Q204
Q41 PAL OSC SW
PAL CLK BUFF Q40
NT CLK BUFF Q39
Q38 NT OSC SW
CT102 4.43M
X102
CT101 3.58M
X101
CLK AMP Q205-206
TRI/NOT
BGP SHIFT Q324
REF DC. BUFF Q323
MODE SW Q539


PULSE REFORM IC5
RESET PULSE GENERATE 1
RESET PULSE GENERATE 2
IC33
D9
INVERTE IC5
RS-422 LINE DRIVER/RECEIVER IC24
CPU IC1
X1 12.288MHz
PROGRAM ROM IC2
RAM IC3
EEPROM IC4
ADDRESS ENCODE/PARALLEL INTERFACE/INTRRUPT CONTROL IC10
WAIT CONTROL IC6
D4
LED DIVE Q7
SW2
SW1
INVERTER IC31
CLAMP PULSE SELECT IC31
SIRCS DECODE IC9
X3 4MHz
SIRCS IS RESET Q5
POWER DOWN DETECT Q4
+5V, SUB
POWER CONTROL DRIVE Q3
ADDRESS ENCODE IC28
IN-PORT IC32
1H, 1V DETECT IC12
X2 16MHz
V-SYNC DETECT IC29
SYNC CONTROL / CLAMP PULSE GENERATE IC11
IC23
WINDOW COMPERATOR IC22
DUAL VOLTAGE-CONTROLLED OSCILATOR IC21
IC23 CLOCK SELECT/BUFFER
VOLTAGE COMPERATOR IC25
CURRENT BUFFER Q6
IC20 DIGITAL PHASE COMPERATOR
INVERTER IC5
IC27
VD SHIFT FOR CHARACTER GENERATE IC26,27
X4 14.098MHz
D5 OSC KILL
DATA BUS BUFFER IC7
ADDRESS BUS BUFFER IC8
CHARACTER & TEST PATTERN GENERATE IC13
CHARACTER SIGNAL TTL > ECL TRANSLATION IC19
IC18 CHARACTER/TEST PATTERN SIGNAL TTL > ECL TRANSLATION
CHARACTER DISPLAY RAM IC14
CHARACTER FONT ROM No.1 IC15
CHARACTER FONT ROM No.2 IC16
CHARACTER FONT ROM No.3 IC17
Y (CPU MEMORY)
V.SHIFT
V.SHIFT BIAS-1 Q12
V.SHIFT LEVEL COMP IC12
V.SHIFT BIAS-2 Q13
V SHIFT GEN IC11
V.SYNC SW Q11
V.SYNC SW IC17
PULSE GEN IC13
S2 V.SYNC OFF
V.SYNC BUFF Q14
JUNGLE IC14
V.STOP PROT Q31
VIDEO AFC SW-2,3 Q29,30
GATE SW IC202(4/6) IC8(1/2) Q9,Q3
VIDEO AFC SW-1 Q27
RV3 VIDEO AFC
H.SYNC BIAS Q15
VD BUFF-1,2 Q16,202
+15V
+B.JANG
H.OSC
AFC HD LEVEL COMP-2 IC16
H.SHIFT BIAS-3 Q8
PULSE GEN IC13
S1 HD OFF
AFC HD BUFF Q9
H.SHIFT
AFC HD LEVEL COMP-1 IC10
H.SHIFT BIAS-1 Q6
H.SHIFT BIAS2 Q7
AFC HD GEN IC9
H.F HD BUFF Q10
SW IC8
AD.HD GEN IC3
AD HD LEVEL COMP IC4
HD BUFF-1 Q1
AD.HD BIAS Q2
AD.HD BUFF Q3,4
H BLK LEVEL COMP. IC6
V-I CONV. Q7
H.BLK BIAS-2 Q5
H.BLK GEN IC5
HD BUFF Q201,230
HD AMP Q32,33
SIRCS IC701
NB (SIRCS)
N.C.
②
③
⑤
⑥
⑩
⑬
⑲
㉑
㉒
㉓
㉔
㉕
㉖
⑨
㉜
㊱
㊼
㉗
⑧
④
⑰
㊸
㊻
㊺

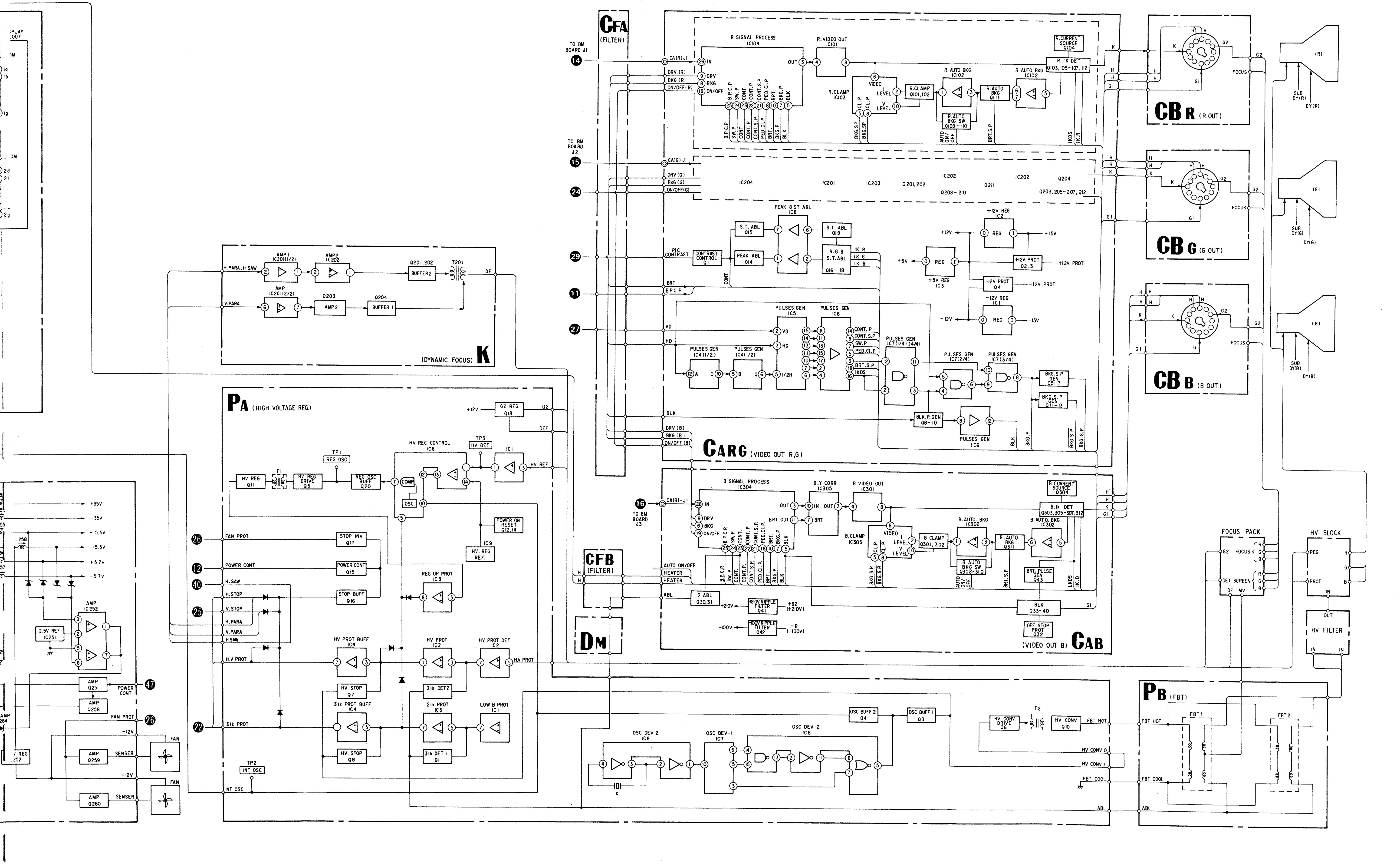

DATA BUS BUFFER IC7
ADDRESS BUS BUFFER IC8
CHARACTER SIGNAL TTL > ECL TRANSLATION IC19
CHARACTER/ TEST PATTERN SIGNAL TTL > ECL TRANSLATION IC18
CHARACTER DISPLAY RAM IC14
CHARACTER FONT ROM No.1 IC15
CHARACTER FONT ROM No.2 IC16
CHARACTER FONT ROM No.3 IC17
X4 14.098MHz
Y (CPU MEMORY)
V.SHIFT BIAS-1 Q12
V.SHIFT LEVEL COMP IC12
V.SHIFT BIAS-2 Q13
V SHIFT GEN IC11
V.SYNC SW Q11
V.SYNC SW IC17
PULSE GEN IC13
V.SYNC BUFF Q14
S2 V.SYNC OFF
JUNGLE IC14
V.STOP PROT Q31
VIDEO AFC SW-2,3 Q29,30
GATE SW IC202(4/6) IC81(2/2) Q9,Q3
VIDEO AFC SW-1 Q27
RV3
VIDEO AFC
H.SYNC BIAS Q15
VD BUFF-1,2 Q16,202
RV1 AFC ADJ
RV2 V.HOLD
AFC HD LEVEL COMP-2 IC16
H.SHIFT BIAS-3 Q8
S1 HD OFF
AFC HD BUFF Q9
AFC HD LEVEL COMP-1 IC10
H.SHIFT BIAS-1 Q6
H.SHIFT BIAS 2 Q7
AFC HD GEN IC9
H.F HD BUFF Q10
SW IC8
AD.HD GEN IC3
AD.HD LEVEL COMP IC4
AD.HD BIAS Q2
AD.HD BUFF Q3,4
HD BUFF-1 Q1
V-1 CONV. Q7
H.BLK LEVEL COMP. IC6
H.BLK BIAS-2 Q5
H.BLK GEN IC5
HD BUFF Q201,230
HD AMP Q32,33
FAN PROT Q803
REGI WAVE GEN IC201
REGI WAVE BUFF IC204
REGI WAVE BUFF IC207
REGI WAVE BUFF IC203
REGI WAVE BUFF IC205
REGI WAVE BUFF IC206
WAVE DEVIDER IC218
TILT SW Q222-229
TILT BUFF IC213
TILT BUFF IC214
H.PARA BIAS IC215
H.SIN MULTIPLEX Q213,220
H SAW RECT IC217
H SIN DEVIDER IC218
H.SIN BUFF IC216
PULSE INV IC202
1/2H BUFF Q203
V.PARA BIAS IC209
V.SAW RECT IC208
V.SAW LIMIT Q240,241
V SIN 1 MULTIPLEX Q232-239
V SIN 2 MULTIPLEX Q205-212
V.SIN BUFF IC211
1/2V BUFF Q204
V.BLK SW IC220
BLK MIX IC221
H.BLK LEVEL DET IC401
BLK BUFF Q221,231
SIZE ABL MULTIPLE Q17-24
LEVEL SHIFT IC15
DA (LARGE WAVEFORM GENERATOR)
DATA BAS BUFF IC501
DATA BAS BUFF IC502
ADD BAS BUFF IC503
ADD BAS BUFF IC504
ADD DECODE IC505-510
H.CENT.CONT-1 IC511
IC552 STAND VOLT.REG
H.CENT.CONT-2 IC512
H.SKEW CONT IC513
H.BOW.CONT IC514
H.SIZE CONT IC515
H LIN CONT IC516
H.KEYS.CONT IC517
H.PIN CONT IC518
V.CENT.CONT-1 IC519
V.CENT.CONT-2 IC520
V.SIZE CONT IC521
V.LIN.CONT IC522
V.SKEW.CONT IC523
V.BOW.CONT IC524
V.KEYS.CONT IC525
V.PIN.CONT IC526
H.ZONE CONT IC527-534
V.ZONE CONT IC535-542
USER CONT IC543
DRV CONT IC544
BKG CONT IC545
BLK CONT IC546
V.OUT BUFF IC547 (1/2),548
SUB OUT BUFF IC549,550 (1/2)
IC550(2/2),551
V.DRIVE R.G.B
V.SUB R.G.B
H.SUB R.G.B
DB (ELECTRONIC VR)
FAN1
TO E BOARD
TO CFA BOARD
TO BB BOARD
TO BA BOARD
TO BM BOARD
TO E BOARD
DM (DEFLECTION MOTHER BOARD)

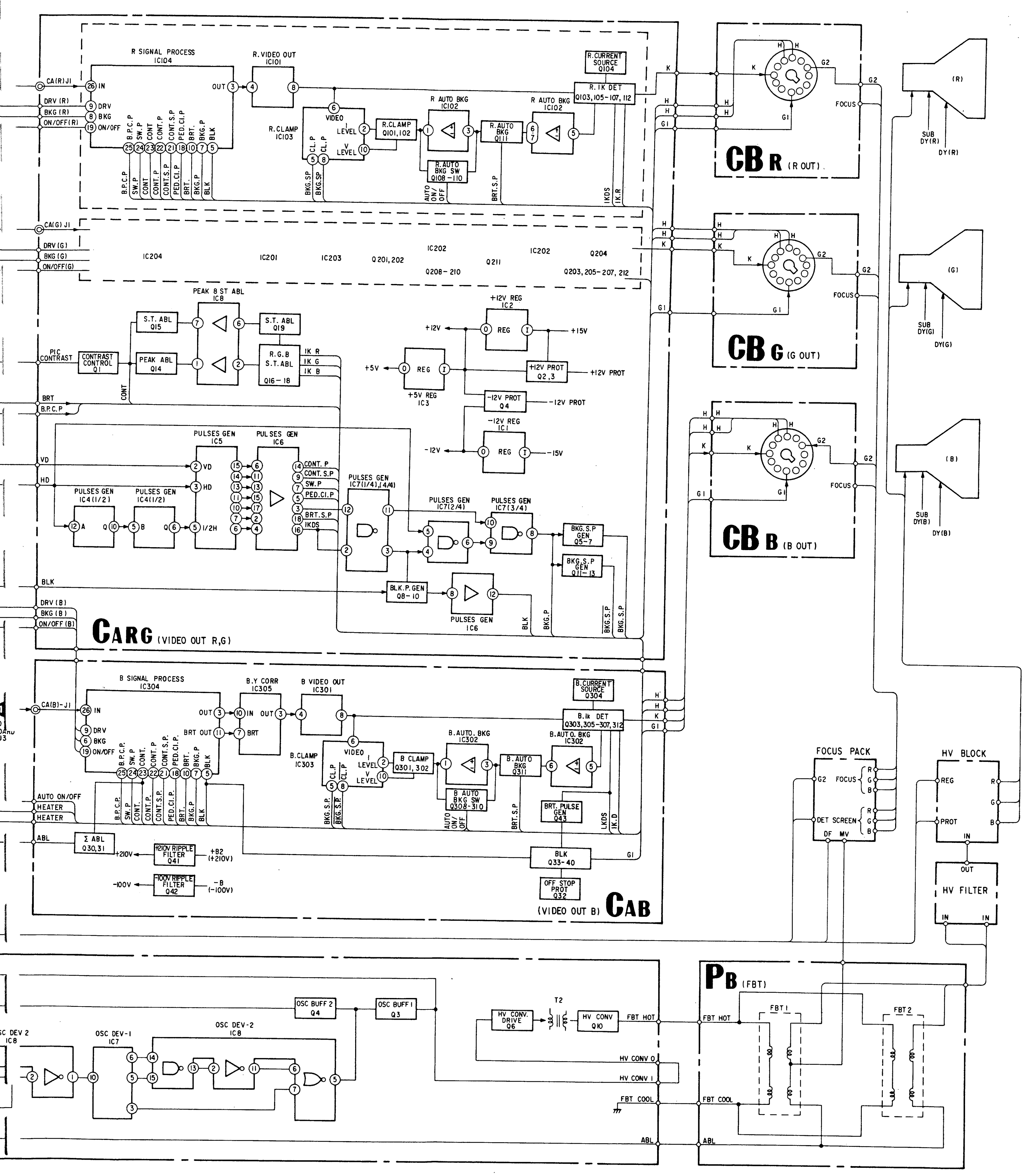

TILT SW
Q222-229
TILT BUFF IC213
TILT BUFF IC214
TILT 1
TILT 4
TILT 2
TILT 3
SIN DEVIDER IC218
H.SIN BUFF IC216
H.SIN 1
H.SIN 2
1/2H BUFF Q203
1/2H
V.SIN BUFF IC211
V SIN 1 MULTIPLEX Q232-239
V SIN 2 MULTIPLEX Q205-212
V.SIN 1
V.SIN 2
1/2V BUFF Q204
1/2V
V.PULSE
BLK MIX IC221
BLK BUFF Q221,231
C.BLK
HSXVS
H.PARA
H.SAW
V.PARA
V.SAW
HPXVS
HSXVP
BLK(B)
BLK(T)
BLK(R)
BLK(L)
H.SIZE
ABL
V.SIZE
DA (LARGE WAVEFORM GENERATOR)
DATA BAS BUFF IC501
DATA BAS BUFF IC502
ADD BAS BUFF IC503
ADD BAS BUFF IC504
D0-D7
WR.A0.A1
A2-A7
A5-A7
A2-A4
IC505
IC506
IC507
IC508
IC509
IC510
ADD DECODE IC505-510
H.CENT.CONT-1 IC511
H.CENT.CONT-2 IC512
IC552 STAND VOLT.REG
H.SKEW CONT IC513
H.BOW.CONT IC514
H.SIZE CONT IC515
H.LIN CONT IC516
H.KEYS.CONT IC517
H PIN CONT IC518
V.CENT.CONT-1 IC519
V.CENT.CONT-2 IC520
V.SIZE CONT IC521
V.LIN.CONT IC522
V.SKEW.CONT IC523
V.BOW.CONT IC524
V.KEYS.CONT IC525
V.PIN.CONT IC526
H.ZONE CONT IC527-534
V.ZONE CONT IC535-542
IC527
IC528
IC529
IC530
IC531
IC532
IC533
IC534
IC535
IC536
IC537
IC538
IC539
IC540
IC541
IC542
USER CONT IC543
DRV CONT IC544
BKG CONT IC545
BLK CONT IC546
H.CENT (R.G.B)
V.SINE 1
SHARP
COLOR
HUE
VOL
V.SINE 2
DRV(G)
DRV(R)
DRV(B)
PIC
V.SAW
H.SINE 1
BKG(G)
BKG(R)
BKG(B)
BRT
V.PARA
H.SINE 2
BLK(T)
BLK(B)
BLK(LEFT)
BLK(RIGHT)
H.SAW
TILT 1
H.SIZE
H.SHIFT
H.KEYS
H.PIN
V.SIZE
V.SHIFT
H.PARA
TILT 3
HSXVS
TILT 2
HSXVP
HPXVS
TILT 4
V.OUT BUFF IC547(1/2),548
V.DRIVE R.G.B
SUB OUT BUFF IC549,550(1/2)
V.SUB R.G.B
IC550(2/2),551
H.SUB R.G.B
DB (ELECTRONIC VR)
R SUB AMP IC101
G.SUB AMP IC102
B.SUB AMP IC103
R.H.SUB PRE DRIVE IC301
G.H.SUB PRE DRIVE IC302
B.H.SUB PRE DRIVE IC303
R.H.SUB DRIVE Q302
G.H.SUB DRIVE Q306
B.H.SUB DRIVE Q310
R.H.SUB ACTIVE LOAD Q301
R.H.SUB OUT Q303,304
G.H.SUB ACTIVE LOAD Q305
G.H.SUB OUT Q307,308
B.H.SUB ACTIVE LOAD Q309
B.H.SUB OUT Q311,312
H.SUB(R)
H.SUB(G)
H.SUB(B)
R.V.SUB AMP IC201
G.V.SUB AMP IC202
B.V.SUB AMP IC203
R.V.SUB DRIVE Q202
G.V.SUB DRIVE Q206
B.V.SUB DRIVE Q210
R.V.SUB ACTIVE LOAD Q201
R.V.SUB OUT Q203,204
G.V.SUB ACTIVE LOAD Q205
G.V.SUB OUT Q207,208
B.V.SUB ACTIVE LOAD Q209
B.V.SUB OUT Q211,212
V.SUB(R)
V.SUB(G)
V.SUB(B)
V.STOP DET IC3
R.V.OUT IC4
V.STOP DET IC5
G.V.OUT IC6
V.STOP DET IC7
B.V.OUT IC8
V.PULSE DET Q1
V.PULSE SET Q2
V.PLUSE DET Q3
V.DRIVE(R)
V.DRIVE(G)
V.DRIVE(B)
V.DY (R)
V.DY (G)
V.DY (B)
V.INV
V.INV SW Q7
INV SENS.
V.STOP
V.STOP CONT SW Q4,5
V.PULSE
V.PULSE BUFF Q6
V.PULSE GEN IC9
+35V
+P VOLT SW Q105
BUFF Q103,104
AD HD SW Q102
AD HD BUFF Q101
AD HD BUFF Q106,107
-P VOLT SW Q108
-35V
AD.HD
CURRENT PROT Q9
+15.5V
+12V
+12V REG IC1
-12V
-12V REG IC2
CURRENT PROT Q10
-15.5V
FAN PROT Q11,13
FAN PROT Q12
FAN6
FAN7
FAN PROT
FAN PROT Q8
SENS
SW2
-B
FAN3
DC (V OUT SUB OUT)
LB
D0-D7
H.SAW
H.PARA
V.PARA
H.SIZE
H.PIN
H.KEYS
C.BLK
BRT
BKG(B)
BKG(G)
PIC(CONT)
DRV(B)
DRV(G)
VOL
HUE
COLOR
SHARP
H.CENT (R.G.B)
34
40
N.C
28
TO E BOARD
29
TO CFA BOARD
1
18
TO BB BOARD
TO BA BOARD
7
30
TO BM BOARD
TO E BOARD
DM (DEFLECTION MOTHER BOARD)


E (H.OUT)
H.KEYS
H.PIN
H.SIZE
F.V AMP IC106
FV AMP IC106,103
TP7 OFFSET ADJ
FV AMP IC105
FV AMP IC103
FV AMP IC104
TP1 FV
F-V AMP IC104
IC111
POWER OFF PROT Q102
T105
PIN MOD REG Q110
F-V AMP IC105
TP2 POWER
PIN MOD PROT Q106
POWER ON BIAS Q129
COMP
OSC
PRE DRIVE Q109
PIN.MOD.REG DRIVE Q107,108
L112
PIN MOD LEVEL CONT IC107
PIN MOD PR AMP IC108
FV SW Q101
PIN MOD PRE BUFF Q103,104
PIN MOD AMP IC112
H.PIN OUT Q111,112
TP3 PIN MOD OUT
L106
IC101
H.OSC
IC112 +B
IC112 -B
T2
+5V
-5V
H.SIZE PROT IC114
CURRENT PROT SW Q121
CURRENT PROT Q120
+100V
H.OSC BUFF Q130,131
H DRIVE Q145
H DRIVE BUFF Q146,147
H DRIVE REG Q143,144
H.SIZE CONT Q113
TP8 SIZE DET
RV104
LOT DRIVE Q22
T3
LOT CONT Q21
-100V
HEATER
HEATER
H.OSC DET IC113
CONT AMP Q132,134
H.OSC DEF IC113
VARIABLE REG.OUT Q135,136,142
IB CONST Q3
IB CONST Q139
IB DET Q148,140
INV OSC BUFF Q121
INT OSC
T103 HDT
T104 HDT
SH-PULSE DET Q141
T102 HDT
H.OUT Q7
HD DRIVE Q118
HD OUT Q116,117
CD
IC101
H.STOP SW Q115
TP6 H.STOP
H.STOP
H.INV
HD(+12V)
H.CENT(R)
IC1
H.CENT OUT Q1,2
LV3
H.DY (R)
H.INV
FAN PROT
+15V
+15.5V
+12V REG IC109
+12V
-12V REG IC110
-12V
-15V
-15.5V
H.CENT(G)
H.DY (G)
H.CENT(B)
H.DY (B)
FAN5
SENS
FAN PROT SW Q128
DM
DO-D7
DECODER IC004
DECODER IC005
DISPLAY IC007
VCA
BUFFER Q13,14
COM
CL
DECODER IC006
BUFFER Q15,16
2COM
LED (WR)
SUB +5V
+5.7V
D1 STD BY
D2 POWER
LED DRIVE Q5
POWER REG IC4
TM1 TM3
LA (ERROR CODE DISPLAY, TIMER)
H.PARA, H SAW
AMP1 IC201(1/2)
AMP1 IC201(2/2)
V.PARA
PA (HIGH VOLTAGE REG
HV REG Q11
T1
M1 (POWER SUPPLY)
AC INLET
T901
F901
SW901
T601
T602
M3B (LINE FILTER)
T101
210V RECT D201-204
L201,203
210V RECT Q201-203
+210V
AMP IC201
2.5V REF IC202
RV202
RV201
100V RECT D205,206
L202 L204
+100V
T102
RECT D51-54
L51
CONTROL IC51
AMP IC203
STOP.S
5.0V REF VOLT IC204
CONV SPEED UP Q101-106
T103,104
DRIVE Q208,209
RY101
F903
D601 AC RECT
L104
DC
AMP Q53
OV Q204,205
OV Q206,207
C1
M2 (POWER SUPPLY)
T151
35V RECT D251,256
L253
15.5V RECT D252,255
L252
5.7V RECT D253,254
L251
L254
L259
L255
L258
L256
L257
+35V
-35V
+15.5V
-15.5V
+5.7V
-5.7V
T152
D51-54
L51
CONTROL IC51
AMP IC252
2.5V REF IC251
RV251
DC
L151
CONV Q151,152
SPEED UP Q153,154
T153,154
DRIVE Q256,257
T155
D281
CONV Q155
5V REG IC253
SUB (+5V)
REG Q254
VCC1
OC Q156
AMP Q253,255
AMP Q53
AMP Q251
AMP Q258
POWER CONT
FAN PROT
CLAMP D284
-12V
-12V REG Q252
AMP Q259
SENSER
FAN
-12V
AMP Q260
SENSER
FAN
C2
FAN PROT
POWER CONT
H.SAW
H.STOP
V.STOP
H.PARA
V.PARA
H.SAW
H.V PROT
Σ Ik PROT
TP2 INT OSC
INT.OSC
28
45
23
30
26
25
46
34
21
12
40
47
22

7-4.

Not


CFA (FILTER)
TO BM BOARD J1
TO BM BOARD J2
TO BM BOARD J3
CA(R) J1
CA(G) J1
CA(B)-J1
DRV (R)
BKG (R)
ON/OFF (R)
DRV (G)
BKG (G)
ON/OFF (G)
DRV (B)
BKG (B)
ON/OFF (B)
R SIGNAL PROCESS IC104
R.VIDEO OUT IC101
R.CLAMP IC103
R.CLAMP Q101,102
R AUTO BKG IC102
R.AUTO BKG Q111
R.AUTO BKG SW Q108-110
R.CURRENT SOURCE Q104
R.IK DET Q103,105-107,112
PEAK & ST ABL IC8
S.T. ABL Q15
S.T. ABL Q19
PIC CONTRAST
CONTRAST CONTROL Q1
PEAK ABL Q14
R.G.B S.T.ABL Q16-18
+12V REG IC2
+12V PROT Q2,3
+5V REG IC3
-12V PROT Q4
-12V REG IC1
BRT
B.P.C.P
VD
HD
PULSES GEN IC5
PULSES GEN IC6
PULSES GEN IC4(1/2)
PULSES GEN IC4(1/2)
PULSES GEN IC7(1/4),(4/4)
PULSES GEN IC7(2/4)
PULSES GEN IC7(3/4)
BKG.S.P GEN Q5-7
BKG.S.P GEN Q11-13
BLK.P.GEN Q8-10
PULSES GEN IC6
BLK
CARG (VIDEO OUT R,G)
CB R (R OUT)
CB G (G OUT)
CB B (B OUT)
SUB DY(R)
DY(R)
SUB DY(G)
DY(G)
SUB DY(B)
DY(B)
FOCUS
G2
(R)
(G)
(B)
K (DYNAMIC FOCUS)
H.PARA, H SAW
V.PARA
AMP1 IC201(1/2)
AMP2 IC202
AMP1 IC201(2/2)
Q203 AMP 2
Q204 BUFFER 1
Q201,202 BUFFER 2
T201
DF
PA (HIGH VOLTAGE REG.)
G2 REG Q18
HV REC CONTROL IC6
TP1 REG OSC
TP3 HV DET
IC1
HV REG Q11
T1
HV REG DRIVE Q5
REG OSC BUFF Q20
COMP
OSC
POWER ON RESET Q12,14
IC9 HV. REG REF.
HV.REF
DEF
Q2
FAN PROT
POWER CONT
H.SAW
H.STOP
V.STOP
H.PARA
V.PARA
H.V PROT
Σ Ik PROT
NT. OSC
STOP INV Q17
POWER CONT Q15
STOP BUFF Q16
REG UP PROT IC3
HV PROT BUFF IC4
HV PROT IC2
HV PROT DET IC2
HV STOP Q7
Σ Ik DET 2
Σ Ik PROT BUFF IC4
Σ Ik PROT IC3
LOW B PROT IC1
HV. STOP Q8
Σ Ik DET 1 Q1
TP2 INT OSC
OSC DEV 2 IC8
OSC DEV-1 IC7
OSC DEV-2 IC8
X1
OSC BUFF 2 Q4
OSC BUFF 1 Q3
HV CONV DRIVE Q6
T2
HV CONV Q10
FBT HOT
HV CONV 0
HV CONV 1
FBT COOL
ABL
PB (FBT)
FBT 1
FBT 2
CFB (FILTER)
DM
AUTO ON/OFF
HEATER
Σ ABL Q30,31
+210V RIPPLE FILTER Q41
-100V RIPPLE FILTER Q42
+B2 (+210V)
-B (-100V)
B SIGNAL PROCESS IC304
B.Y CORR IC305
B VIDEO OUT IC301
B.CLAMP IC303
B CLAMP Q301,302
B.AUTO.BKG IC302
B AUTO BKG Q311
B AUTO BKG SW Q308-310
B.CURRENT SOURCE Q304
B.Ik DET Q303,305-307,312
BRT. PULSE GEN Q43
BLK Q33-40
OFF STOP PROT Q32
(VIDEO OUT B) CAB
FOCUS PACK
HV BLOCK
HV FILTER
DET SCREEN
+35V
-35V
+15.5V
-15.5V
+5.7V
-5.7V
AMP IC252
2.5V REF IC251
AMP Q251
AMP Q258
AMP Q259
AMP Q260
POWER CONT
FAN PROT
SENSER
FAN
-12V
⓮
⓯
㉔
㉙
⓫
㉗
⓰
㉖
⓬
㊵
㉕
㉒
㊼


R SIGNAL PROCESS IC104
R.VIDEO OUT IC101
R.CURRENT SOURCE Q104
R.IK DET Q103,105-107,112
R AUTO BKG IC102
R.CLAMP IC103
R.CLAMP Q101,102
R.AUTO BKG Q111
R.AUTO BKG SW Q108-110
CA(R)J1
DRV (R)
BKG (R)
ON/OFF(R)
CA(G)J1
DRV (G)
BKG (G)
ON/OFF(G)
IC204
IC201
IC203
Q201,202
IC202
Q211
Q204
Q208-210
Q203,205-207,212
PEAK & ST ABL IC8
S.T. ABL Q15
S.T. ABL Q19
PIC CONTRAST
CONTRAST CONTROL Q1
PEAK ABL Q14
R.G.B S.T.ABL Q16-18
+12V REG IC2
+12V PROT Q2,3
+5V REG IC3
-12V PROT Q4
-12V REG IC1
+12V
+15V
+5V
+12V PROT
-12V PROT
-12V
-15V
BRT
B.P.C.P
VD
HD
PULSES GEN IC5
PULSES GEN IC6
PULSES GEN IC4(1/2)
PULSES GEN IC4(1/2)
PULSES GEN IC7(1/4),(4/4)
PULSES GEN IC7(2/4)
PULSES GEN IC7(3/4)
BKG.S.P GEN Q5-7
BKG.S.P GEN Q11-13
BLK.P.GEN Q8-10
BLK
DRV (B)
BKG (B)
ON/OFF (B)
CARG (VIDEO OUT R,G)
B SIGNAL PROCESS IC304
B.Y CORR IC305
B VIDEO OUT IC301
B.CURRENT SOURCE Q304
B.Ik DET Q303,305-307,312
B.AUTO. BKG IC302
B.CLAMP IC303
B CLAMP Q301,302
B.AUTO BKG Q311
B AUTO BKG SW Q308-310
BRT. PULSE GEN Q43
BLK Q33-40
CA(B)-J1
AUTO ON/OFF
HEATER
ABL
Σ ABL Q30,31
+210V RIPPLE FILTER Q41
-100V RIPPLE FILTER Q42
+210V
-100V
+B2 (+210V)
-B (-100V)
OFF STOP PROT Q32
(VIDEO OUT B) CAB
CB R (R OUT)
CB G (G OUT)
CB B (B OUT)
G2
FOCUS
G1
K
H
SUB DY(R)
DY(R)
SUB DY(G)
DY(G)
SUB DY(B)
DY(B)
(R)
(G)
(B)
FOCUS PACK
DET SCREEN
HV BLOCK
REG
PROT
HV FILTER
IN
OUT
PB (FBT)
FBT 1
FBT 2
FBT HOT
HV CONV O
HV CONV I
FBT COOL
ABL
OSC BUFF 2 Q4
OSC BUFF 1 Q3
OSC DEV-1 IC7
OSC DEV-2 IC8
HV CONV. DRIVE Q6
HV CONV Q10
T2

7-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μ F unless otherwise noted. pF : μ μ F 50WV or less are not indicated except for electrolytics.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms, 1/4W in resistance; 1/10W in chip resistance.

  k Ω =1000 Ω , M Ω =1000k Ω
- : nonflammable resistor.
- : fusible resistor.
- Δ : internal component.
- ☐ : panel designation and adjustment for repair.
- All variable and adjustable resistors have charactristic curve B, unless otherwise noted.

- The components identified by ☒ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ☒ and repeat the adjustment until the specified value is achieved.(Refer to R1, R4, R29, R30, R33, R34, R41, R42 adjust on Page 137~140)

Part replaced (◪)	Adjustment (☒)
IC2, Q7, D9, D12, C13, R20, R21, R22, R23, R24, R32, R33, R34, R35, R36, R82, (PA BOARD) PA MOUNT HV BLOCK	HV HOLD DOWN (R33, R34)
IC1, IC6, IC7, IC8, IC9, D13, C16, R37, R38, R39, R40, R41, R42, R53, R55, R56, R58, R59, R129, X1, (PA BOARD) PA MOUNT, PB MOUNT HV BLOCK	HV REGULATION (R41, R42)
IC2, IC3, IC5, Q1, Q2, Q7, Q8, D4, D5, D9, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R20, R21, R22, R23, R24, R43, R44, R45, R46, R47,R82, R88, R119, R120, R121, R122, (PA BOARD) R199 (DA BOARD) PA MOUNT, PB MOUNT	BEAM CURRENT PROTECTOR (R1, R4)
IC1, IC3, IC5, Q8, D4, D5, D10, D11, R9, R10, R26, R28, R29, R30, R31, R88, R95 (PA BOARD) PA MOUNT	LOW B PROTECTOR (R29, R30)

- Voltage value is the reference value between it & the earth, when NTSC 3.58 color bar signal is received from color bar generator (digital multi- meter used : 10M ohms/V DC).
- ☆ : Displays a list of BB, BA board modes.
  (PAL, SECAM, NTSC 3.58, NTSC 4.43)
  Displays a list of existing voltages, when board E has issued a white pattern of internal signals.
- Unit of voltage values is V (volt).
- For other modes, see the respective circuit diagrams.
- : Measurement disabled
- : B+ line
- : B− line

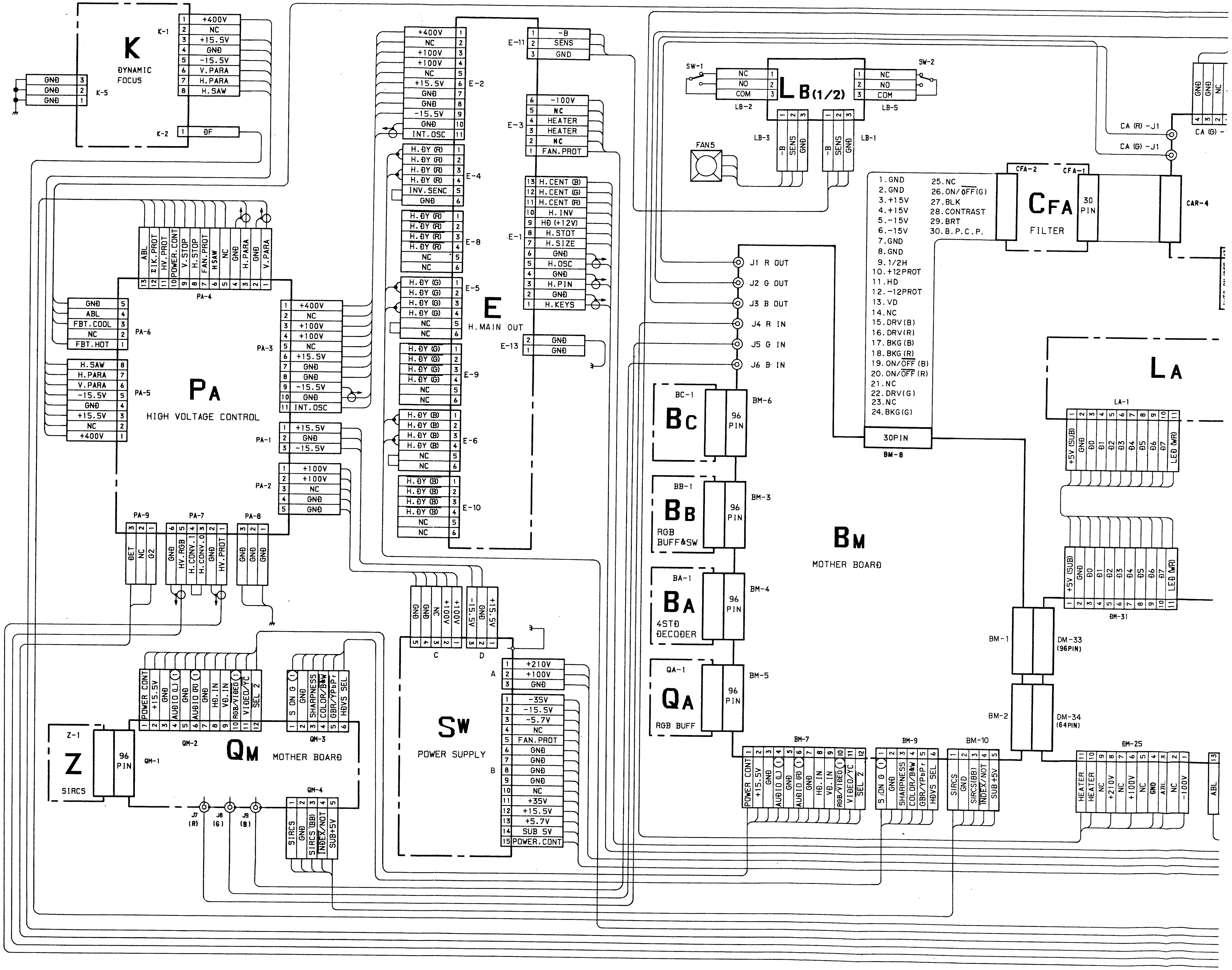
  (Actual measured value may be different).
- Round numerals indicate Waveform Table No.

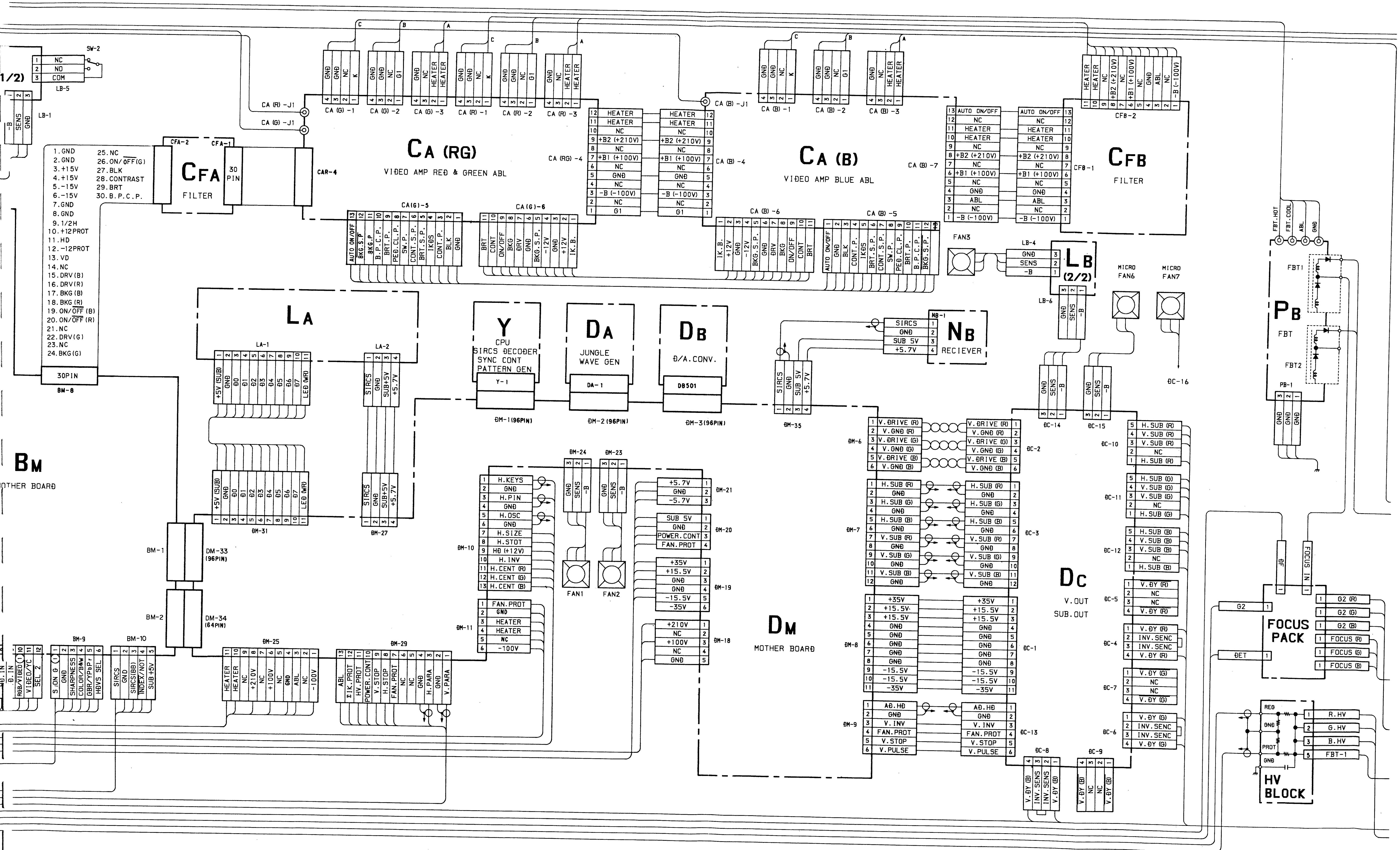
Reference information

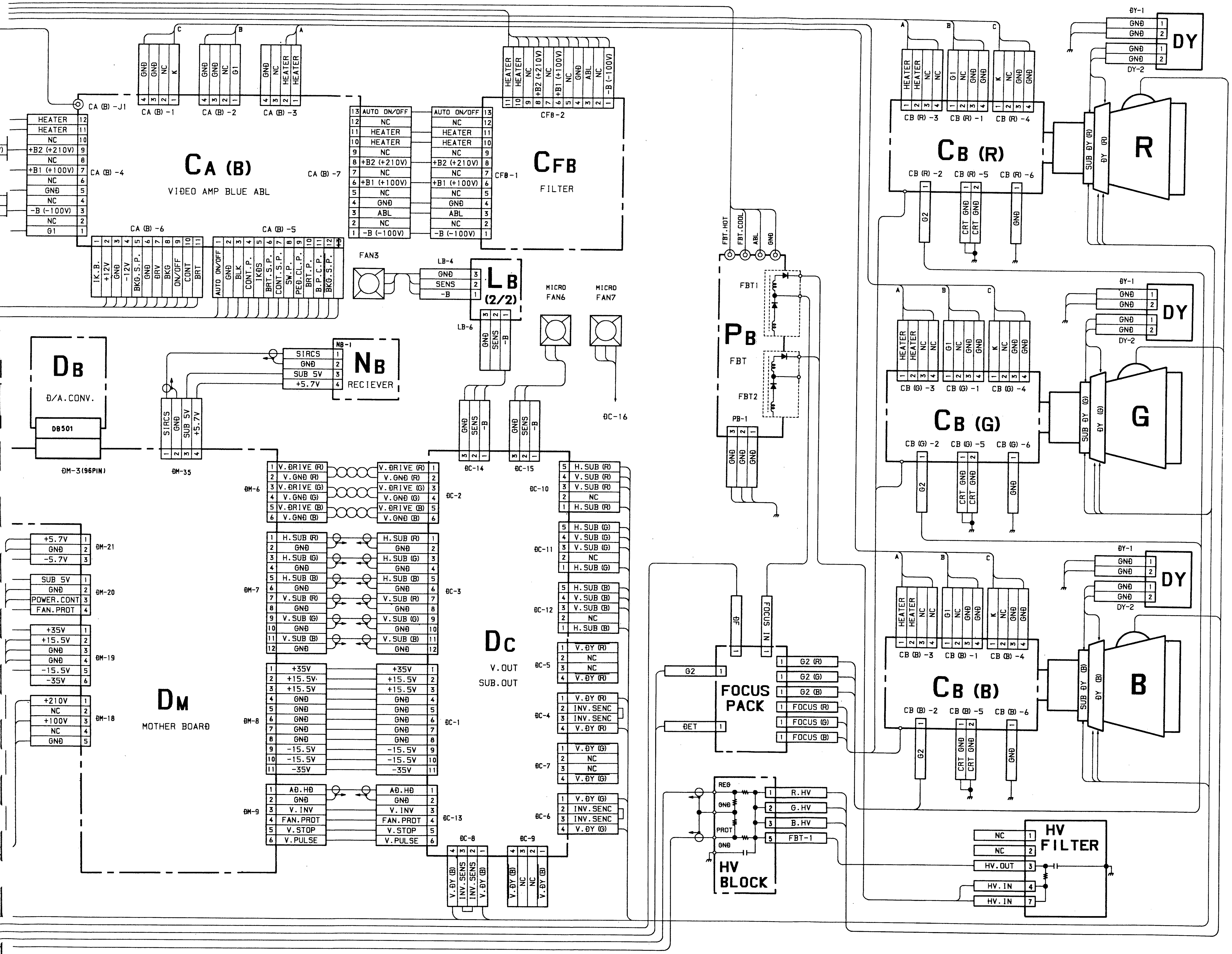
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

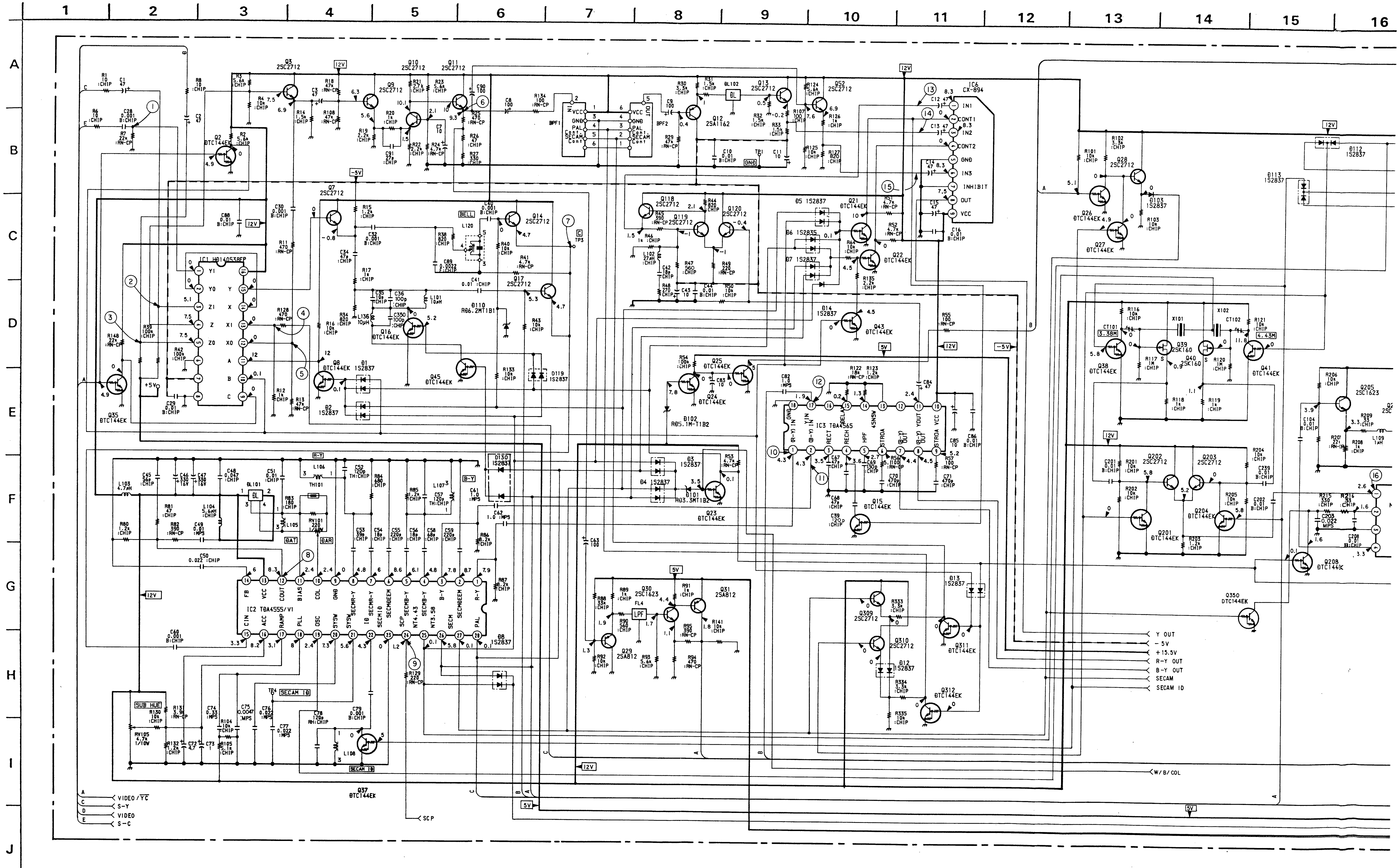
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

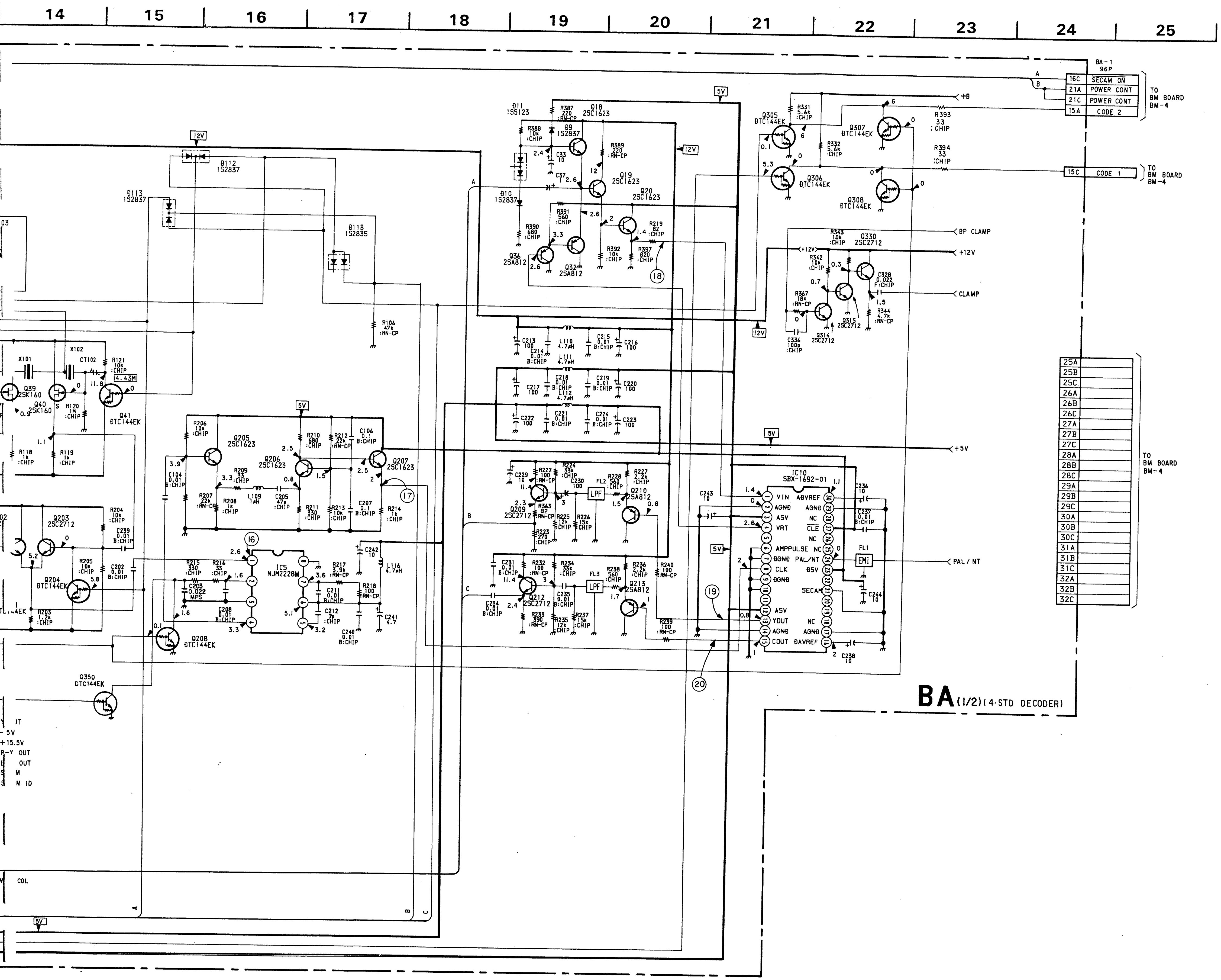
Frame Schematic Diagram


K
DYNAMIC FOCUS
K-1
K-2
K-5
E
H.MAIN OUT
E-1
E-2
E-3
E-4
E-5
E-6
E-8
E-9
E-10
E-11
E-13
LB(1/2)
LB-1
LB-2
LB-3
LB-5
SW-1
SW-2
FAN5
CFA
FILTER
CFA-1
CFA-2
CAR-4
CA (R) -J1
CA (G) -J1
PA
HIGH VOLTAGE CONTROL
PA-1
PA-2
PA-3
PA-4
PA-5
PA-6
PA-7
PA-8
PA-9
J1 R OUT
J2 G OUT
J3 B OUT
J4 R IN
J5 G IN
J6 B IN
BC
BC-1
BB
RGB BUFF&SW
BB-1
BA
4STD DECODER
BA-1
QA
RGB BUFF
QA-1
96 PIN
BM
MOTHER BOARD
BM-1
BM-2
BM-3
BM-4
BM-5
BM-6
BM-7
BM-8
BM-9
BM-10
BM-25
30PIN
DM-33 (96PIN)
DM-34 (64PIN)
LA
LA-1
BM-31
SW
POWER SUPPLY
QM
MOTHER BOARD
QM-1
QM-2
QM-3
QM-4
Z
SIRCS
Z-1
J7 (R)
J8 (G)
J9 (B)
1.GND
2.GND
3.+15V
4.+15V
5.-15V
6.-15V
7.GND
8.GND
9.1/2H
10.+12PROT
11.HD
12.-12PROT
13.VD
14.NC
15.DRV(B)
16.DRV(R)
17.BKG(B)
18.BKG(R)
19.ON/OFF(B)
20.ON/OFF(R)
21.NC
22.DRV(G)
23.NC
24.BKG(G)
25.NC
26.ON/OFF(G)
27.BLK
28.CONTRAST
29.BRT
30.B.P.C.P.


CA (RG)
VIDEO AMP RED & GREEN ABL
CA (B)
VIDEO AMP BLUE ABL
CFA
FILTER
CFB
FILTER
LA
Y
CPU
SIRCS DECODER
SYNC CONT
PATTERN GEN
DA
JUNGLE
WAVE GEN
DB
D/A.CONV.
NB
RECIEVER
LB (2/2)
PB
FBT
FBT1
FBT2
BM
MOTHER BOARD
DM
MOTHER BOARD
DC
V.OUT
SUB.OUT
FOCUS PACK
HV BLOCK
SW-2
LB-5
LB-1
LB-4
LB-6
CFA-2
CFA-1
30 PIN
CAR-4
CA (R)-J1
CA (G)-J1
CA (B)-J1
CA (G)-1
CA (G)-2
CA (G)-3
CA (R)-1
CA (R)-2
CA (R)-3
CA (B)-1
CA (B)-2
CA (B)-3
CA (RG)-4
CA (B)-4
CA (B)-7
CA (G)-5
CA (G)-6
CA (B)-6
CA (B)-5
CFB-1
CFB-2
FAN1
FAN2
FAN3
MICRO FAN6
MICRO FAN7
LA-1
LA-2
Y-1
DA-1
DB501
NB-1
PB-1
30PIN
BM-8
BM-1
BM-2
BM-9
BM-10
DM-1 (96PIN)
DM-2 (96PIN)
DM-3 (96PIN)
DM-33 (96PIN)
DM-34 (64PIN)
DM-35
DM-31
DM-27
DM-24
DM-23
DM-25
DM-29
DM-21
DM-20
DM-19
DM-18
DM-10
DM-11
DM-6
DM-7
DM-8
DM-9
DC-1
DC-2
DC-3
DC-4
DC-5
DC-6
DC-7
DC-8
DC-9
DC-10
DC-11
DC-12
DC-13
DC-14
DC-15
DC-16
1.GND
2.GND
3.+15V
4.+15V
5.-15V
6.-15V
7.GND
8.GND
9.1/2H
10.+12PROT
11.HD
12.-12PROT
13.VD
14.NC
15.DRV(B)
16.DRV(R)
17.BKG(B)
18.BKG(R)
19.ON/OFF(B)
20.ON/OFF(R)
21.NC
22.DRV(G)
23.NC
24.BKG(G)
25.NC
26.ON/OFF(G)
27.BLK
28.CONTRAST
29.BRT
30.B.P.C.P.
HEATER
+B2 (+210V)
+B1 (+100V)
-B (-100V)
AUTO ON/OFF
ABL
G1
K
NC
GND
SENS
SIRCS
SUB 5V
+5.7V
H.KEYS
H.PIN
H.OSC
H.SIZE
H.STOT
HD (+12V)
H.INV
H.CENT (R)
H.CENT (G)
H.CENT (B)
FAN.PROT
POWER.CONT
V.DRIVE (R)
V.DRIVE (G)
V.DRIVE (B)
V.GND (R)
V.GND (G)
V.GND (B)
H.SUB (R)
H.SUB (G)
H.SUB (B)
V.SUB (R)
V.SUB (G)
V.SUB (B)
+35V
+15.5V
-15.5V
-35V
AD.HD
V.INV
V.STOP
V.PULSE
V.DY (R)
V.DY (G)
V.DY (B)
INV.SENC
INV.SENS
G2 (R)
G2 (G)
G2 (B)
FOCUS (R)
FOCUS (G)
FOCUS (B)
DF
FOCUS IN
DET
R.HV
G.HV
B.HV
FBT-1
REG
PROT
FBT.HOT
FBT.COOL


CA (B)
VIDEO AMP BLUE ABL
CA (B) -J1
CA (B) -1
CA (B) -2
CA (B) -3
CA (B) -4
CA (B) -5
CA (B) -6
CA (B) -7
GND
NC
K
G1
HEATER
+B2 (+210V)
+B1 (+100V)
-B (-100V)
AUTO ON/OFF
ABL
I.K.B.
+12V
-12V
BKG.S.P.
DRV
BKG
ON/OFF
CONT
BRT
BLK
CONT.P.
IKBS
BRT.S.P.
CONT.S.P.
SW.P.
PED.CL.P.
BRT.P.
B.P.C.P.
BKG.S.P.
CFB
FILTER
CFB-1
CFB-2
FAN3
LB (2/2)
LB-4
LB-6
SENS
-B
MICRO FAN6
MICRO FAN7
DB
D/A.CONV.
DB501
DM-3(96PIN)
NB
RECIEVER
NB-1
SIRCS
SUB 5V
+5.7V
DM-35
DM
MOTHER BOARD
DM-6
DM-7
DM-8
DM-9
DM-18
DM-19
DM-20
DM-21
-5.7V
POWER.CONT
FAN.PROT
+35V
+15.5V
-15.5V
-35V
+210V
+100V
DC
V.OUT
SUB.OUT
DC-1
DC-2
DC-3
DC-4
DC-5
DC-6
DC-7
DC-8
DC-9
DC-10
DC-11
DC-12
DC-13
DC-14
DC-15
DC-16
V.DRIVE (R)
V.GND (R)
V.DRIVE (G)
V.GND (G)
V.DRIVE (B)
V.GND (B)
H.SUB (R)
H.SUB (G)
H.SUB (B)
V.SUB (R)
V.SUB (G)
V.SUB (B)
V.DY (R)
V.DY (G)
V.DY (B)
INV.SENC
INV.SENS
AD.HD
V.INV
V.STOP
V.PULSE
PB
FBT
FBT1
FBT2
PB-1
FBT.HOT
FBT.COOL
FOCUS PACK
DF
FOCUS IN
G2
DET
G2 (R)
G2 (G)
G2 (B)
FOCUS (R)
FOCUS (G)
FOCUS (B)
HV BLOCK
REG
PROT
R.HV
G.HV
B.HV
FBT-1
HV FILTER
HV.OUT
HV.IN
CB (R)
CB (G)
CB (B)
CB (R) -1
CB (R) -2
CB (R) -3
CB (R) -4
CB (R) -5
CB (R) -6
CB (G) -1
CB (G) -2
CB (G) -3
CB (G) -4
CB (G) -5
CB (G) -6
CB (B) -1
CB (B) -2
CB (B) -3
CB (B) -4
CB (B) -5
CB (B) -6
CRT GND
SUB DY (R)
DY (R)
SUB DY (G)
DY (G)
SUB DY (B)
DY (B)
DY
DY-1
DY-2
R
G
B
A
C


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
IC1 HD14053BFP
IC2 TDA4555/V1
IC3 TDA4565
IC6 CX-894
BPF1
BPF2
BL101
BL102
L103 4.7μH
L104 5.6μH
L105
L106
L107
L108
TH101
RV101
RV105 4.7k 1/10W
SUB HUE
BAT
DAR
BELL
SECAM ID
LPF
FL4
X101
X102
CT101 3.38M
CT102 4.43M
D130 1S2837
D101 RD3.3MT1B2
D102 RD5.1M-T1B2
D110 RD6.2MT1B1
D119 1S2837
D112 1S2837
D113 1S2837
Q2 DTC144EK
Q3 2SC2712
Q7 2SC2712
Q8 DTC144EK
Q9 2SC2712
Q10 2SC2712
Q11 2SC2712
Q12 2SA1162
Q13 2SC2712
Q14 2SC2712
Q16 DTC144EK
Q17 2SC2712
Q23 DTC144EK
Q24 DTC144EK
Q25 DTC144EK
Q26 DTC144EK
Q27 DTC144EK
Q28 2SC2712
Q29 2SA812
Q30 2SC1623
Q31 2SA812
Q35 DTC144EK
Q37 DTC144EK
Q38 DTC144EK
Q39 2SK160
Q40 2SK160
Q41 DTC144EK
Q43 DTC144EK
Q45 DTC144EK
Q52 2SC2712
Q118 2SC2712
Q119 2SC2712
Q120 2SC2712
Q201 DTC144EK
Q202 2SC2712
Q203 2SC2712
Q204 DTC144EK
Q205 2SC1623
Q208 DTC144EK
Q309 2SC2712
Q310 2SC2712
Q311 DTC144EK
Q312 DTC144EK
Q350 DTC144EK
12V
5V
-5V
+5V
TP3
VIDEO/YC
S-Y
VIDEO
S-C
SCP
Y OUT
-5V
+15.5V
R-Y OUT
B-Y OUT
SECAM
SECAM ID
W/B/COL
R-Y
B-Y

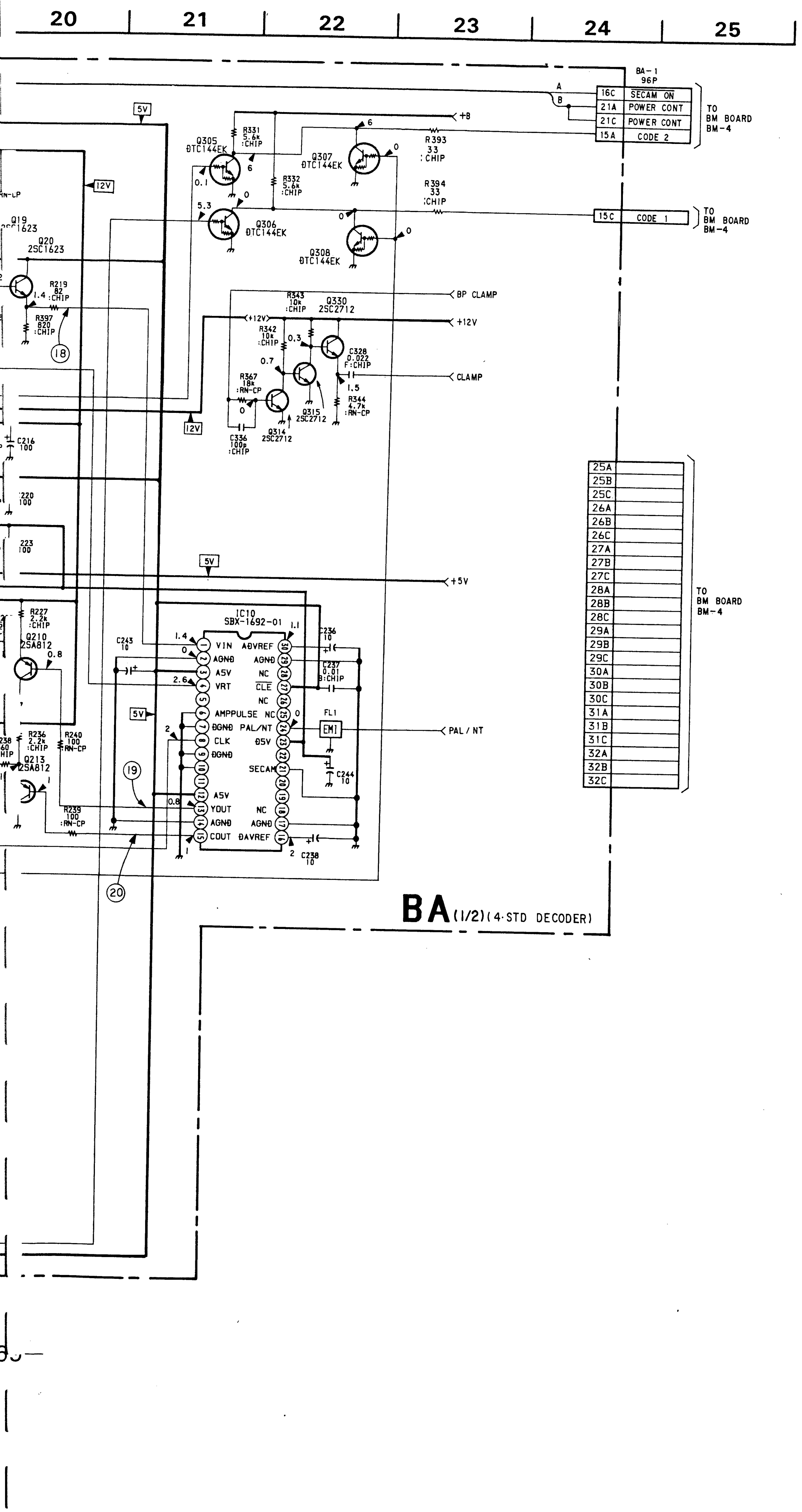

14
15
16
17
18
19
20
21
22
23
24
25
BA-1
96P
16C SECAM ON
21A POWER CONT
21C POWER CONT
15A CODE 2
15C CODE 1
TO BM BOARD BM-4
+B
R393 33 :CHIP
R394 33 :CHIP
BP CLAMP
+12V
CLAMP
+5V
PAL / NT
Q305 DTC144EK
Q306 DTC144EK
Q307 DTC144EK
Q308 DTC144EK
Q314 2SC2712
Q315 2SC2712
Q330 2SC2712
R331 5.6k :CHIP
R332 5.6k :CHIP
R343 10k :CHIP
R342 10k :CHIP
R367 18k :RN-CP
R344 4.7k :RN-CP
C328 0.022 F:CHIP
C336 100p :CHIP
25A
25B
25C
26A
26B
26C
27A
27B
27C
28A
28B
28C
29A
29B
29C
30A
30B
30C
31A
31B
31C
32A
32B
32C
IC10 SBX-1692-01
VIN
AGND
A5V
VRT
AMPPULSE
DGND
CLK
DGND
A5V
YOUT
AGND
COUT
ADVREF
AGND
NC
CLE
NC
NC
PAL/NT
D5V
SECAM
NC
AGND
DAVREF
C243 10
C236 10
C237 0.01 B:CHIP
C244 10
C238 10
FL1 EMI
5V
12V
D11 1SS123
D9 1S2837
D10 1S2837
D112 1S2837
D113 1S2837
D118 1S2835
Q18 2SC1623
Q19 2SC1623
Q20 2SC1623
Q36 2SA812
Q37 2SA812
R387 220 :RN-CP
R388 10k :CHIP
R389 220 :RN-CP
R390 680 :CHIP
R391 560 :CHIP
R392 10k :CHIP
R397 820 :CHIP
R219 82 :CHIP
C33 10
C37
R106 47k :RN-CP
C215 0.01 B:CHIP
C216 100
C213 100
C214 0.01 B:CHIP
L110 4.7μH
L111 4.7μH
C217 100
C218 0.01 B:CHIP
C219 0.01 B:CHIP
C220 100
L112 4.7μH
C222 100
C221 0.01 B:CHIP
C224 0.01 B:CHIP
C223 100
X101
X102
CT102
R121 10k :CHIP
4.43M
Q39 2SK160
Q40 2SK160
Q41 DTC144EK
R120 1M :CHIP
R118 1k :CHIP
R119 1k :CHIP
Q203 2SC2712
Q204 DTC144EK
R204 10k :CHIP
C239 0.01 B:CHIP
R205 10k :CHIP
C202 0.01 B:CHIP
R203 1.2k :CHIP
Q205 2SC1623
Q206 2SC1623
Q207 2SC1623
R206 10k :CHIP
R210 680 :CHIP
R212 22k :RN-CP
C106 0.1 B:CHIP
C104 0.01 B:CHIP
R209 33 :CHIP
L109 1mH
C205 47p :CHIP
R207 22k :RN-CP
R208 1k :CHIP
R211 330 :CHIP
R213 10k :CHIP
C207 0.1 B:CHIP
R214 1k :CHIP
IC5 NJM2228M
R215 330 :CHIP
R216 33 :CHIP
R217 3.9k :RN-CP
C242 10
L116 4.7μH
C203 0.022 MPS
C208 0.01 B:CHIP
C211 0.01 B:CHIP
R218 100 :RN-CP
C212 7p :CHIP
C240 0.01 B:CHIP
C241 4.7
Q208 DTC144EK
Q350 DTC144EK
C229 10
R222 100 :RN-CP
R224 33k :CHIP
C230 100
FL2 LPF
R228 560 :CHIP
R227 2.2k :CHIP
Q209 2SC2712
R343 82
Q210 2SA812
R225 12k :CHIP
R226 15k :CHIP
R223 270 :CHIP
C231 0.01 B:CHIP
R232 100 :RN-CP
R234 33k :CHIP
FL3 LPF
R238 560 :CHIP
R236 2.2k :CHIP
R240 100 :RN-CP
Q212 2SC2712
C235 0.01 B:CHIP
Q213 2SA812
C234 0.01 B:CHIP
R233 390 :RN-CP
R235 12k :CHIP
R237 15k :CHIP
R239 100 :RN-CP
⑯
⑰
⑱
⑲
⑳
A
B
C
COL
5V
+15.5V
R-Y OUT
OUT
M
M ID
BA (1/2) (4-STD DECODER)

BA (1/2)	IC1	HD14053BFP	SYSTEM SW-1	201	DTC144EK	NT/PAL Y AMP-1
	2	TDA4555/V1	DECODER	202	2SC2712	CLK BUFF-3
	3	TDA4565	TRANSIENT	203	2SC2712	CLK BUFF-4
	5	NJM2228M	IMPROVE	204	DTC144EK	PAL CLK SW
	6	CX-894	CLK GEN	205	2SC1623	CLK AMP-1
	10	SBX1692-01	VIDEO AMP	206	2SC1623	CLK AMP-2
			COMB FILTER	207	2SC1623	CLK AMP-3
	Q2	DTC144EK		208	DTC144EK	GEN SW
	3	2SC2712	MODE SW-1	209	2SC2712	NT/PAL Y BUFF-2
	7	2SC2712	VIDEO BUFF-1	210	2SA812	NT/PAL Y BUFF-1
	8	DTC144EK	C BUFF	212	2SC1712	NT/PAL C BUFF-2
	9	2SC2712	MODE SW-1	213	2SA812	NT/PAL C BUFF-1
	10	2SC2712	VIDEO AMP-1	305	DTC144EK	CODE 2 SW-1
	11	2SC2712	VIDEO AMP-2	306	DTC144EK	CODE 1 SW-1
	12	2SA1162	VIDEO AMP-3	307	DTC144EK	CODE SW-2
	13	2SC2712	Y BUFF-1	308	DTC144EK	CODE SW-2
	14	2SC2712	Y BUFF-2	309	2SC2712	NT3.58 SW
	15	DTC144EK	SECAM C BUFF	310	2SC2712	NT4.43 SW
	16	DTC144EK	MODE SW-10	311	DTC144EK	TRAP SW
	17	2SC2712	C FILTER SW	312	DTC144EK	TRAP SW
	18	2SC1623	NT/PAL C BUFF	314	2SC2712	CLAMP BUFF-1
	19	2SC1623	CLAMP-4	315	2SC2712	CLAMP BUFF-2
	20	2SC1623	CLAMP-6	330	2SC2712	CLAMP BUFF-3
	21	DTC144EK	NT/PAL VIDEO BUFF	350	DTC144ES	GEN SW
	22	DTC144EK	Y MODE SW-6			
	23	DTC144EK	Y MODE SW-7	D1	1S2837	SYSTEM DET-1
	24	DTC144EK	B/W SW-4	2	1S2837	SYSTEM DET-2
	25	DTC144EK	POWER CONT-1	3	1S2837	B/W SW-1
	26	DTC144EK	POWER CONT-2	4	1S2837	B/W SW-2
	27	DTC144EK	SECAM SW-1	5	1S2837	Y MODE SW-1
	28	2SC2712	SECAM SW-2	6	1S2835	Y MODE SW-2
	29	2SA812	SECAM SW-3	7	1S2837	Y MODE SW-3
	30	2SC1623	NT/PAL VIDEO	8	1S2837	MODE SW-3
	31	2SA812	BUFF-1	9	1S2837	CLAMP-3
	32	2SA812	NT/PAL VIDEO AMP-1	10	1S2837	CLAMP-2
	35	DTC144EK	NT/PAL VIDEO AMP-2	11	1SS123	CLAMP-1
	36	2SA812	CLAMP-5	12	1S2837	NT3.58 DET
	37	DTC144EK	MODE SW-2	13	1S2837	MODE SW-11
	38	DTC144EK	CLAMP	14	1S2837	Y MODE SW-4
	39	2SK160	ID	101	RD3.3M-B2	B/W SW-3
	40	2SK160	NT OSC SW	102	RD5.1M-B2	POWER CONT
	41	DTC144EK	NT CLK BUFF-1	103	1S2837	SECAM SW-4
	43	DTC144EK	PAL CLK BUFF-2	110	RD6.2M-B1	SECAM SW
	45	DTC144EK	PAL OSC SW	112	1S2837	MODE SW-4
	52	2SC2712	Y MODE SW-5	113	1S2837	MODE SW-5
	118	2SC2712	C FILTER SW	118	1S2835	MODE SW-6
	119	2SC2712	VIDEO BUFF-2	119	1S2837	C FILTER SW
	120	2SC2712	NT/PAL Y AMP-3	130	1S2837	C FILTER SW

BA BOARD (1/2)

REF	Pin No.	NTSC 3.58	PAL	SECAM	NTSC 4.43
IC1	②	0	0	- 0.7	- 0.7
	⑪	12	12	0	0
	⑫	0	0	- 0.7	- 0.7
	⑭	0	0	- 0.7	- 0.7
	⑮	0	0	- 0.7	- 0.7
IC2	⑤	6.1	5.8	4.2	7.6
	⑦	6	5.5	4.2	7.3
	⑲	2.4	2.4	5.6	2.4
	⑳	7.5	5.7	5.7	7.5
	㉑	5.6	7.7	6.8	5.6
	㉕	0.1	0.1	0.1	5.8
	㉖	5.8	0.1	0.1	0.1
	㉗	0.1	0.1	5.8	0.1
	㉘	0.1	5.8	0.1	0.1
IC6	②	10	0	0	10
	④	0	10	10	0
IC10	㉔	0	3.6	3.6	0

REF		NTSC 3.58	PAL	SECAM	NTSC 4.43	REF		NTSC 3.58	PAL
Q7	B	0	0	- 0.8	- 0.8	Q202	B	5.8	0
	C	–	–	–	–		C	–	–
	E	- 0.8	- 0.8	- 1.4	- 1.4		E	5.2	5.1
Q8	B	0.1	0.1	5.3	5.3	Q203	B	0	5.8
	C	12	12	0	0		C	–	–
	E	–	–	–	–		E	5.2	5.1
Q16	B	5.2	0.2	0.2	5.2	Q204	B	5.8	0
	C	0	3.5	1.5	0		C	0	5.8
	E	–	–	–	–		E	–	–
Q17	B	5.3	5.3	0.2	5.3	Q305	B	0.1	5.8
	C	4.7	4.7	5	4.7		C	6	0
	E	–	–	–	–		E	–	–
Q21	B	0.1	0.1	5.3	5.3	Q306	B	5.3	0.1
	C	0	0	0	0		C	0	6
	E	–	–	–	–		E	–	–
Q22	B	4.5	4.5	0.5	0.5	Q307	B	0	0
	C	0	0	10	10		C	6	0
	E	–	–	–	–		E	–	–
Q27	B	4.9	0	0	4.9	Q308	B	0	0
	C	0	0	0	0		C	0	6
	E	–	–	–	–		E	–	–
Q37	B	5	0	0	5	Q309	B	0	0
	C	0	0	0	0		C	–	–
	E	–	–	–	–		E	0	0
Q38	B	5.7	0	0	0	Q310	B	0	5.1
	C	0	11.7	11.7	11.7		C	–	–
	E	–	–	–	–		E	0	4.5
Q41	B	0	5.9	0	5.1	Q311	B	0	0.5
	C	11.8	0	11.8	0		C	0	0
	E	–	–	–	–		E	–	–
Q43	B	0	0	0	0	Q312	B	0	0.5
	C	4.5	4.5	0.5	0.5		C	0	2.8
	E	–	–	–	–		E	–	–
Q201	B	0	5.2	0	5.2				
	C	5.8	0	5.8	0				
	E	–	–	–	–				


20
21
22
23
24
25
BA-1
96P
A
B
16C SECAM ON
21A POWER CONT
21C POWER CONT
15A CODE 2
TO BM BOARD BM-4
15C CODE 1
TO BM BOARD BM-4
5V
12V
+8
Q305 DTC144EK
R331 5.6k :CHIP
Q307 DTC144EK
R393 33 :CHIP
R332 5.6k :CHIP
R394 33 :CHIP
Q306 DTC144EK
Q308 DTC144EK
Q19 2SC1623
Q20 2SC1623
R219 82 :CHIP
R397 820 :CHIP
BP CLAMP
R343 10k :CHIP
Q330 2SC2712
+12V
R342 10k :CHIP
C328 0.022 F:CHIP
CLAMP
R367 18k :RN-CP
R344 4.7k :RN-CP
Q315 2SC2712
Q314 2SC2712
C336 100p :CHIP
C216 100
220 100
223 100
+5V
TO BM BOARD BM-4
25A
25B
25C
26A
26B
26C
27A
27B
27C
28A
28B
28C
29A
29B
29C
30A
30B
30C
31A
31B
31C
32A
32B
32C
IC10 SBX-1692-01
VIN
AGND
A5V
VRT
AMPPULSE
BGND
CLK
BGND
A5V
YOUT
AGND
COUT
ADVREF
AGND
NC
CLE
NC
NC
PAL/NT
D5V
SECAM
NC
AGND
DAVREF
C243 10
C236 10
C237 0.01 B:CHIP
C244 10
C238 10
FL1
EMI
PAL / NT
R227 2.2k :CHIP
Q210 2SA812
R236 2.2k :CHIP
R240 100 :RN-CP
Q213 2SA812
R239 100 :RN-CP
BA (1/2) (4·STD DECODER)

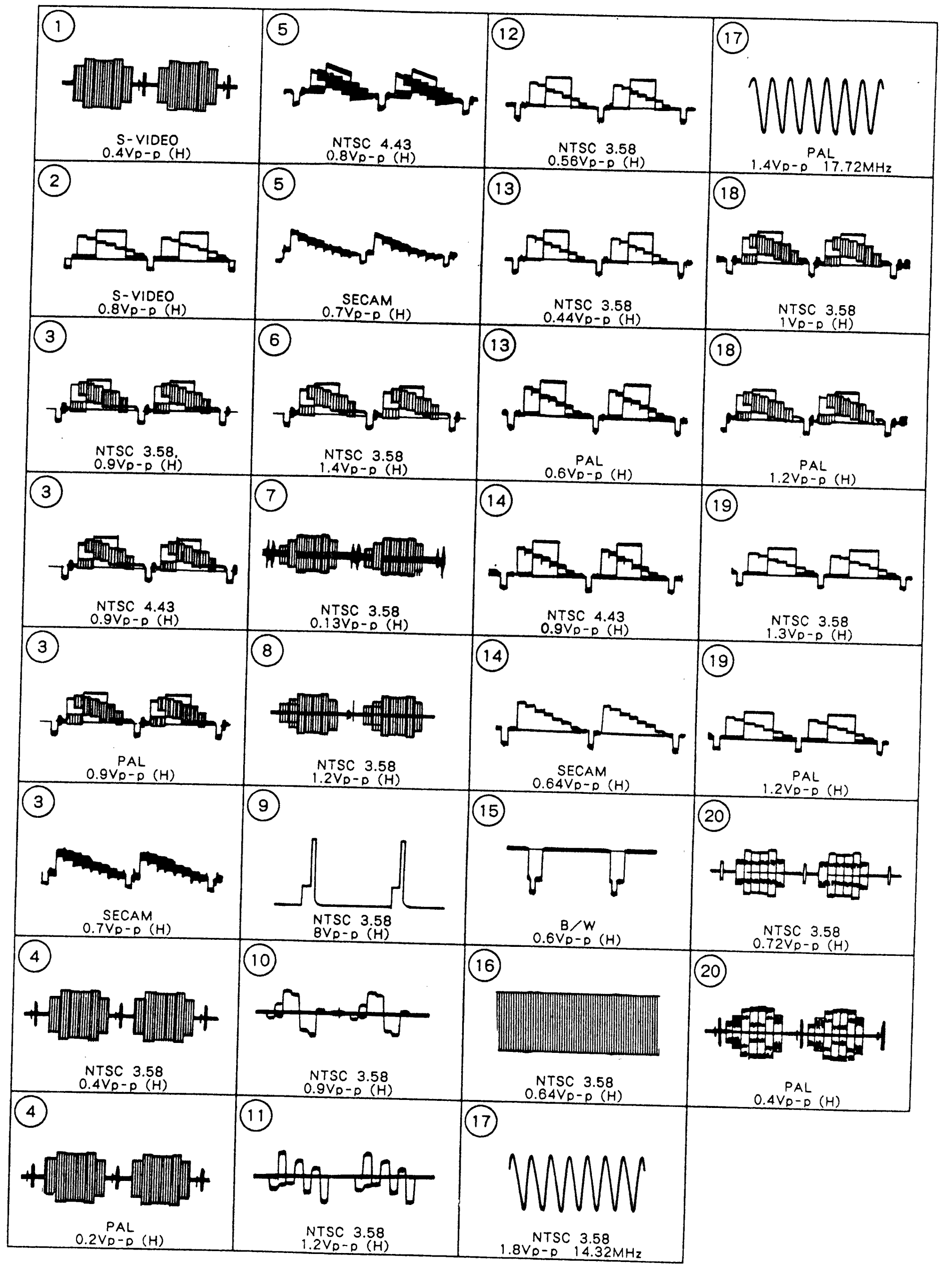
BA (1/2)	IC1	HD14053BFP	SYSTEM SW-1	201	DTC144EK	NT/PAL Y AMP-1
	2	TDA4555/V1	DECODER	202	2SC2712	CLK BUFF-3
	3	TDA4565	TRANSIENT	203	2SC2712	CLK BUFF-4
	5	NJM2228M	IMPROVE	204	DTC144EK	PAL CLK SW
	6	CX-894	CLK GEN	205	2SC1623	CLK AMP-1
	10	SBX1692-01	VIDEO AMP	206	2SC1623	CLK AMP-2
			COMB FILTER	207	2SC1623	CLK AMP-3
	Q2	DTC144EK		208	DTC144EK	GEN SW
	3	2SC2712	MODE SW-1	209	2SC2712	NT/PAL Y BUFF-2
	7	2SC2712	VIDEO BUFF-1	210	2SA812	NT/PAL Y BUFF-1
	8	DTC144EK	C BUFF	212	2SC1712	NT/PAL C BUFF-2
	9	2SC2712	MODE SW-1	213	2SA812	NT/PAL C BUFF-1
	10	2SC2712	VIDEO AMP-1	305	DTC144EK	CODE 2 SW-1
	11	2SC2712	VIDEO AMP-2	306	DTC144EK	CODE 1 SW-1
	12	2SA1162	VIDEO AMP-3	307	DTC144EK	CODE SW-2
	13	2SC2712	Y BUFF-1	308	DTC144EK	CODE SW-2
	14	2SC2712	Y BUFF-2	309	2SC2712	NT3.58 SW
	15	DTC144EK	SECAM C BUFF	310	2SC2712	NT4.43 SW
	16	DTC144EK	MODE SW-10	311	DTC144EK	TRAP SW
	17	2SC2712	C FILTER SW	312	DTC144EK	TRAP SW
	18	2SC1623	NT/PAL C BUFF	314	2SC2712	CLAMP BUFF-1
	19	2SC1623	CLAMP-4	315	2SC2712	CLAMP BUFF-2
	20	2SC1623	CLAMP-6	330	2SC2712	CLAMP BUFF-3
	21	DTC144EK	NT/PAL VIDEO BUFF	350	DTC144ES	GEN SW
	22	DTC144EK	Y MODE SW-6			
	23	DTC144EK	Y MODE SW-7	D1	1S2837	SYSTEM DET-1
	24	DTC144EK	B/W SW-4	2	1S2837	SYSTEM DET-2
	25	DTC144EK	POWER CONT-1	3	1S2837	B/W SW-1
	26	DTC144EK	POWER CONT-2	4	1S2837	B/W SW-2
	27	DTC144EK	SECAM SW-1	5	1S2837	Y MODE SW-1
	28	2SC2712	SECAM SW-2	6	1S2835	Y MODE SW-2
	29	2SA812	SECAM SW-3	7	1S2837	Y MODE SW-3
	30	2SC1623	NT/PAL VIDEO	8	1S2837	MODE SW-3
	31	2SA812	BUFF-1	9	1S2837	CLAMP-3
	32	2SA812	NT/PAL VIDEO AMP-1	10	1S2837	CLAMP-2
	35	DTC144EK	NT/PAL VIDEO AMP-2	11	1SS123	CLAMP-1
	36	2SA812	CLAMP-5	12	1S2837	NT3.58 DET
	37	DTC144EK	MODE SW-2	13	1S2837	MODE SW-11
	38	DTC144EK	CLAMP	14	1S2837	Y MODE SW-4
	39	2SK160	ID	101	RD3.3M-B2	B/W SW-3
	40	2SK160	NT OSC SW	102	RD5.1M-B2	POWER CONT
	41	DTC144EK	NT CLK BUFF-1	103	1S2837	SECAM SW-4
	43	DTC144EK	PAL CLK BUFF-2	110	RD6.2M-B1	SECAM SW
	45	DTC144EK	PAL OSC SW	112	1S2837	MODE SW-4
	52	2SC2712	Y MODE SW-5	113	1S2837	MODE SW-5
	118	2SC2712	C FILTER SW	118	1S2835	MODE SW-6
	119	2SC2712	VIDEO BUFF-2	119	1S2837	C FILTER SW
	120	2SC2712	NT/PAL Y AMP-3	130	1S2837	C FILTER SW

BA BOARD (1/2)

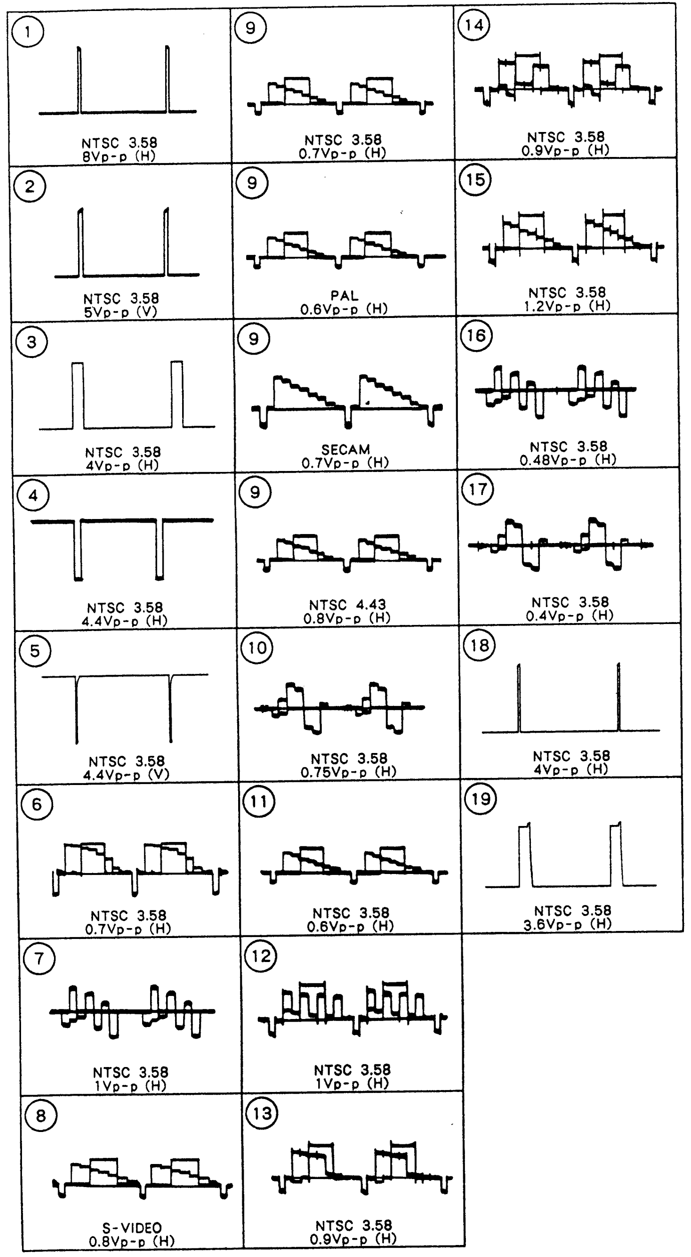
REF	Pin No.	NTSC 3.58	PAL	SECAM	NTSC 4.43
IC1	②	0	0	− 0.7	− 0.7
	⑪	12	12	0	0
	⑫	0	0	− 0.7	− 0.7
	⑭	0	0	− 0.7	− 0.7
	⑮	0	0	− 0.7	− 0.7
IC2	⑤	6.1	5.8	4.2	7.6
	⑦	6	5.5	4.2	7.3
	⑲	2.4	2.4	5.6	2.4
	⑳	7.5	5.7	5.7	7.5
	㉑	5.6	7.7	6.8	5.6
	㉕	0.1	0.1	0.1	5.8
	㉖	5.8	0.1	0.1	0.1
	㉗	0.1	0.1	5.8	0.1
	㉘	0.1	5.8	0.1	0.1
IC6	②	10	0	0	10
	④	0	10	10	0
IC10	㉔	0	3.6	3.6	0

REF		NTSC 3.58	PAL	SECAM	NTSC 4.43	REF		NTSC 3.58	PAL	SECAM	NTSC 4.43
Q7	B	0	0	− 0.8	− 0.8	Q202	B	5.8	0	5.8	0
	C	–	–	–	–		C	–	–	–	–
	E	− 0.8	− 0.8	− 1.4	− 1.4		E	5.2	5.1	5.2	5.1
Q8	B	0.1	0.1	5.3	5.3	Q203	B	0	5.8	5.8	5.8
	C	12	12	0	0		C	–	–	–	–
	E	–	–	–	–		E	5.2	5.1	5.2	5.1
Q16	B	5.2	0.2	0.2	5.2	Q204	B	5.8	0	0	0
	C	0	3.5	1.5	0		C	0	5.8	5.8	5.8
	E	–	–	–	–		E	–	–	–	–
Q17	B	5.3	5.3	0.2	5.3	Q305	B	0.1	5.8	0.1	0.1
	C	4.7	4.7	5	4.7		C	6	0	6	6
	E	–	–	–	–		E	–	–	–	–
Q21	B	0.1	0.1	5.3	5.3	Q306	B	5.3	0.1	0.1	5.3
	C	0	0	0	0		C	0	6	6	0
	E	–	–	–	–		E	–	–	–	–
Q22	B	4.5	4.5	0.5	0.5	Q307	B	0	0	0	0
	C	0	0	10	10		C	6	0	6	6
	E	–	–	–	–		E	–	–	–	–
Q27	B	4.9	0	0	4.9	Q308	B	0	0	0	0
	C	0	0	0	0		C	0	6	6	6
	E	–	–	–	–		E	–	–	–	–
Q37	B	5	0	0	5	Q309	B	0	0	5.7	0
	C	0	0	0	0		C	–	–	–	–
	E	–	–	–	–		E	0	0	5.1	0
Q38	B	5.7	0	0	0	Q310	B	0	5.1	0	5.1
	C	0	11.7	11.7	11.7		C	–	–	–	–
	E	–	–	–	–		E	0	4.5	1.4	4.5
Q41	B	0	5.9	0	5.1	Q311	B	0	0.5	0.2	0.5
	C	11.8	0	11.8	0		C	0	0	3.8	2.8
	E	–	–	–	–		E	–	–	–	–
Q43	B	0	0	0	0	Q312	B	0	0.5	0.2	0.5
	C	4.5	4.5	0.5	0.5		C	0	2.8	3.2	2.8
	E	–	–	–	–		E	–	–	–	–
Q201	B	0	5.2	0	5.2						
	C	5.8	0	5.8	0						
	E	–	–	–	–						

BA BOARD(1/2)



BA BOARD(2/2)

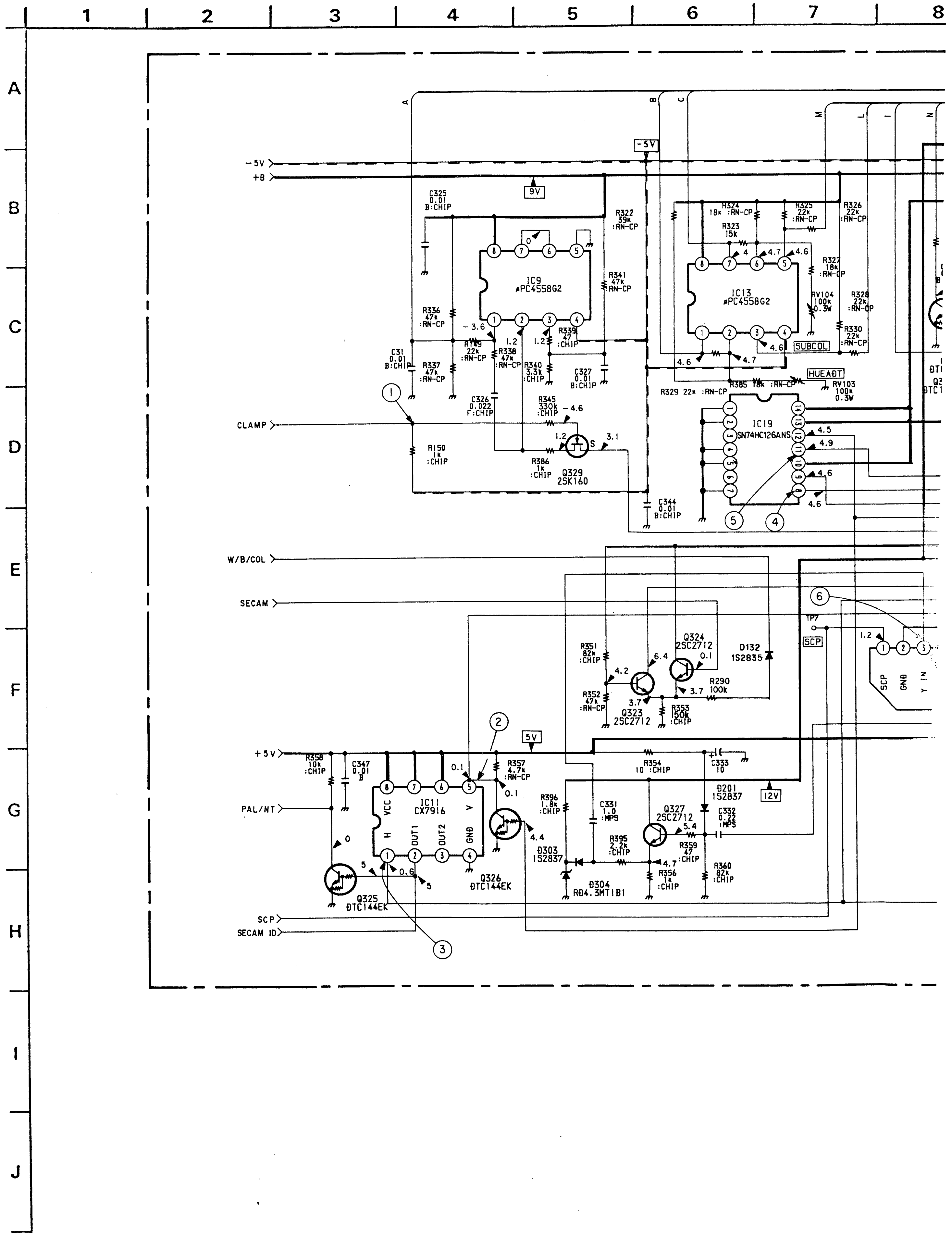


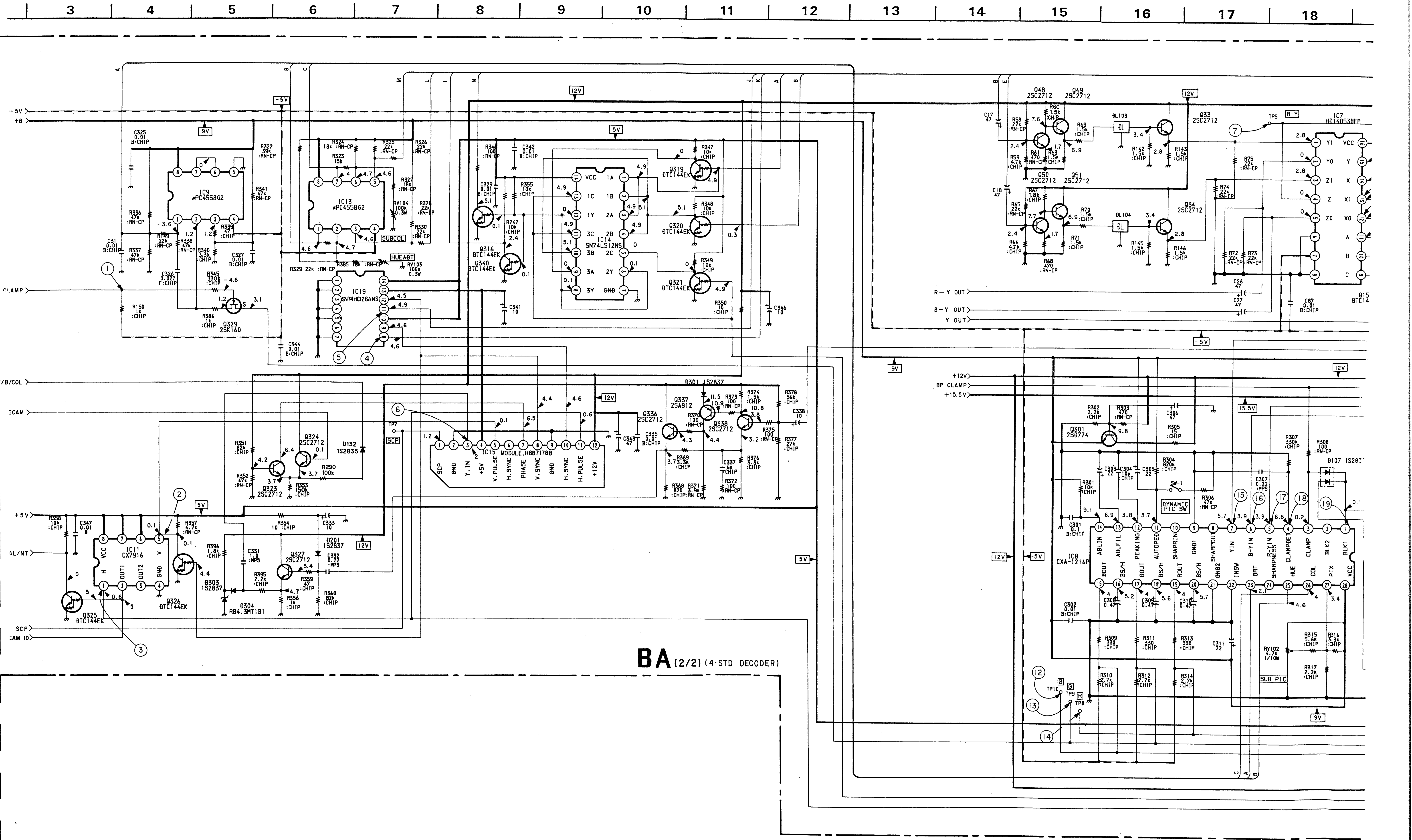
BA (2/2)	IC7	HD14053BFP	SYSTEM SW-2
	8	CXA1216P	MATRIX
	9	μPC4558G2	BRT CONT-2
	11	CX-7916	50/60 DET
	12	SNY-9202	SHARPNESS
	13	μPC4558G2	LEVEL SHIFT-1
	14	SN74LS12NS	MODE DET
	15	H8B7178B	JUNGLE
	16	LM7812CT	12V REG
	17	PQ05RF1	5V REG
	19	SN74HC126ANS	SYNC BUFF
	Q33	2SC2712	R-Y BUFF-1
	34	2SC2712	B-Y BUFF-1
	48	2SC2712	R-Y AMP-1
	49	2SC2712	R-Y AMP-2
	50	2SC2712	B-Y AMP-1
	51	2SC2712	B-Y AMP-2
	152	DTC144EK	SYSTEM MODE SW-2
	301	2SD774	9V REG
	302	2SC2712	BLK BUFF-1
	303	2SC2712	B-Y BUFF-2
	304	2SC2712	R-Y BUFF-2
	313	2SC2712	Y AMP-3
	316	DTC144EK	
	317	2SC2712	Y AMP-2
	318	2SC2712	Y AMP
	319	DTC144EK	MODE SW-7
	320	DTC144EK	MODE SW-8
	321	DTC144EK	MODE SW-9
	323	2SC2712	REF DC BUFF
	324	2SC2712	BGP SHIFT
	325	DTC144EK	50/60 SW
	326	DTC144EK	V SYNC SW
	327	2SC2712	Y CLAMP-2
	329	2SK160	BRT CONT-1
	336	2SC2712	Y AMP-6
	337	2SA812	Y AMP-5
	338	2SC2712	Y AMP-4
	340	DTC144EK	MODE DET
	D107	1S2837	BLK ADD-2
	108	V06C	+12V PROT
	109	V06C	+5V PROT
	117	1S2837	BLK ADD-1
	132	1S2835	
	201	1S2837	Y CLAMP-1
	301	1S2837	LEVEL SHIFT-2
	303	1S2837	Y LEVEL ADJ-2
	304	RD4.3M-B1	Y LEVEL ADJ-1

BA BOARD (2/2)

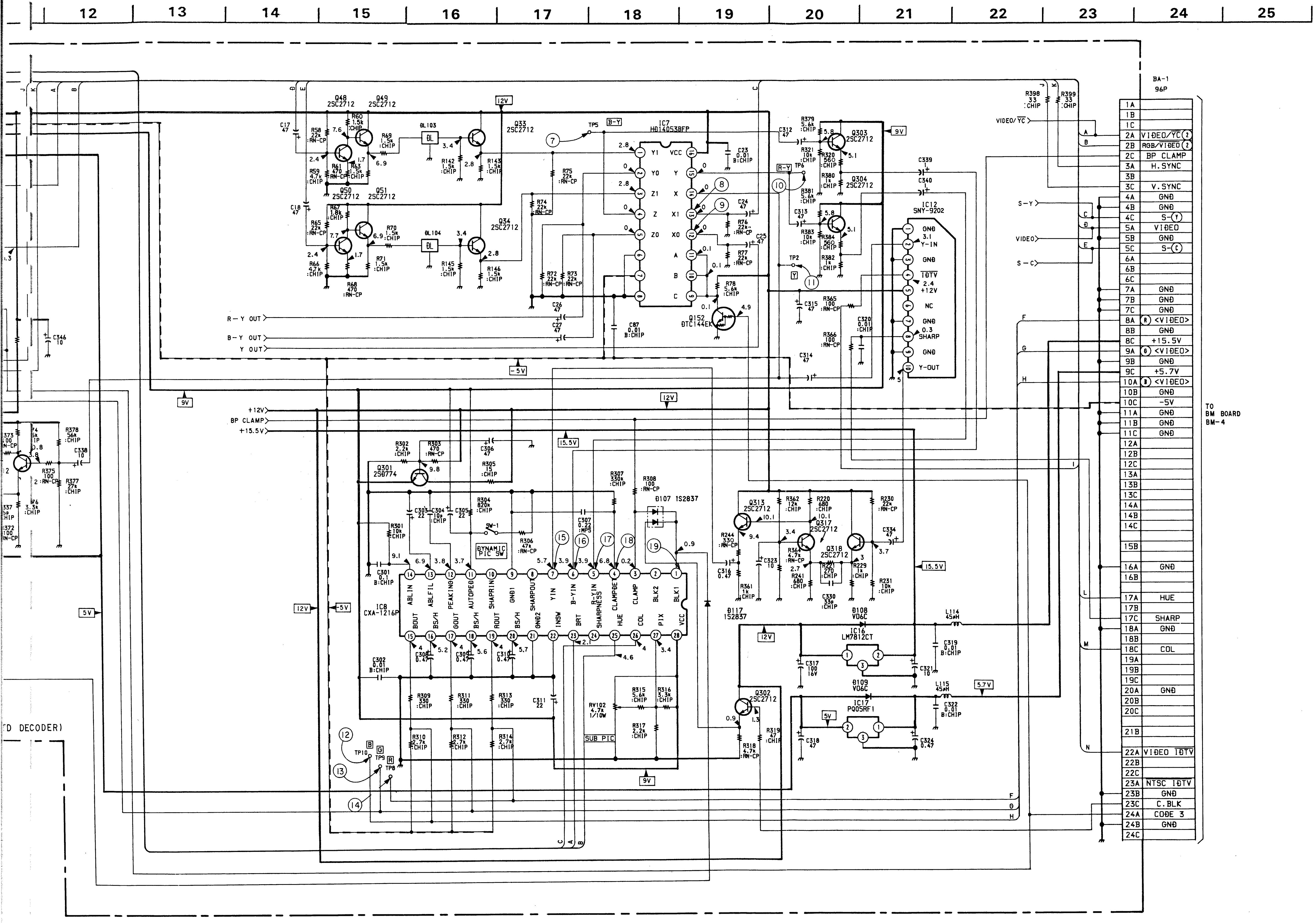
REF	Pin No.	NTSC 3.58	PAL	SECAM	NTSC 4.43
IC11	②	5	0	0	5

REF		NTSC 3.58	PAL	SECAM	NTSC 4.43
Q325	B	5	0	0	5
	C	0	3.6	3.6	0
	E	–	–	–	–


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
−5V
+B
9V
−5V
C325 0.01 B:CHIP
IC9 μPC4558G2
R322 39k :RN-CP
R341 47k :RN-CP
R336 47k :RN-CP
R337 47k :RN-CP
C31 0.01 B:CHIP
R149 22k :RN-CP
R338 47k :RN-CP
R339 47 :CHIP
R340 3.3k :CHIP
C327 0.01 B:CHIP
C326 0.022 F:CHIP
R345 330k :CHIP
R150 1k :CHIP
R386 1k :CHIP
Q329 2SK160
C344 0.01 B:CHIP
CLAMP
IC13 μPC4558G2
R323 15k
R324 18k :RN-CP
R325 22k :RN-CP
R326 22k :RN-CP
R327 18k :RN-CP
R328 22k :RN-CP
R330 22k :RN-CP
RV104 100k 0.3W
SUBCOL
HUE ADT
R329 22k :RN-CP
R385 18k :RN-CP
RV103 100k 0.3W
IC19 SN74HC126ANS
W/B/COL
SECAM
TP7
SCP
R351 82k :CHIP
R352 47k :RN-CP
Q323 2SC2712
Q324 2SC2712
R353 150k :CHIP
R290 100k
D132 1S2835
+5V
5V
R358 10k :CHIP
C347 0.01 B
IC11 CX7916
VCC
H
OUT1
OUT2
GND
V
R357 4.7k :RN-CP
Q326 DTC144EK
Q325 DTC144EK
PAL/NT
SCP
SECAM ID
R396 1.8k :CHIP
C331 1.0 :MPS
D303 1S2837
D304 RD4.3MT1B1
R395 2.2k :CHIP
R354 10 :CHIP
C333 10
D201 1S2837
12V
Q327 2SC2712
C332 0.22 :MPS
R359 47 :CHIP
R356 1k :CHIP
R360 82k :CHIP
SCP
GND
Y IN


3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
-5V
+B
CLAMP
B/COL
CAM
+5V
AL/NT
SCP
CAM ID
IC9 μPC4558G2
IC13 μPC4558G2
IC19 SN74HC126ANS
IC14 SN74LS12NS
IC11 CX7916
IC15 MODULE, H8B7178B
SCP
GND
Y.IN
+5V
V.PULSE
H.SYNC
PHASE
V.SYNC
GND
H.SYNC
H.PULSE
+12V
Q329 2SK160
Q323 2SC2712
Q324 2SC2712
Q325 DTC144EK
Q326 DTC144EK
Q327 2SC2712
Q316 DTC144EK
Q340 DTC144EK
Q319 DTC144EK
Q320 DTC144EK
Q321 DTC144EK
Q336 2SC2712
Q337 2SA812
Q338 2SC2712
D132 1S2835
D301 1S2837
D201 1S2837
D303 1S2837
D304 RD4.3MT1B1
SUBCOL
HUEADT
RV103 100k 0.3W
RV104 100k 0.3W
Q48 2SC2712
Q49 2SC2712
Q50 2SC2712
Q51 2SC2712
Q33 2SC2712
Q34 2SC2712
BL103
BL104
IC7 HD14053BFP
TP5
B-Y
R-Y OUT
B-Y OUT
Y OUT
+12V
BP CLAMP
+15.5V
Q301 2SB774
IC8 CXA-1216P
ABLIN
ABLFIL
PEAKING
AUTOPED
SHARPIN
GND1
SHARPOUT
YIN
B-YIN
R-YIN
CLAMPBE
CLAMP
BLK2
BLK1
BOUT
BS/H
GOUT
GS/H
ROUT
RS/H
GND2
INSW
BRT
SHARPNESS
HUE
COL
PIX
VCC
DYNAMIC PIC SW
SW-1
SUB PIC
RV102 4.7k 1/10W
D107 1S283
TP10
TP9
TP8
5V
9V
12V
15.5V

BA(2/2) (4-STD DECODER)


12
13
14
15
16
17
18
19
20
21
22
23
24
25
Q48 2SC2712
Q49 2SC2712
Q50 2SC2712
Q51 2SC2712
Q33 2SC2712
Q34 2SC2712
DL103
DL104
IC7 HD14053BFP
TP5 B-Y
Y1 VCC Y0 Y Z1 X Z X1 Z0 X0 A B C
Q152 DTC144EK
R-Y OUT
B-Y OUT
Y OUT
C346 10
9V
12V
-5V
15.5V
+12V
BP CLAMP
+15.5V
Q301 2SB774
DYNAMIC PIC SW
SW-1
IC8 CXA-1216P
ABLIN ABLFIL PEAKING AUTOPED SHAPRIN GND1 SHARPOUT YIN B-YIN R-YIN CLAMPBE CLAMP BLK2 BLK1
BOUT BS/H GOUT BS/H ROUT BS/H GND2 INSW SHARPNESS BRT HUE COL PIX VCC
D107 1S2837
D117 1S2837
RV102 4.7k 1/10W
SUB PIC
TP10 TP9 TP8
B G R
5V
D DECODER)
IC12 SNY-9202
GND Y-IN GND IDTV +12V NC GND SHARP GND Y-OUT
TP6 R-Y
TP2 Y
Q303 2SC2712
Q304 2SC2712
Q313 2SC2712
Q317 2SC2712
Q318 2SC2712
Q302 2SC2712
IC16 LM7812CT
IC17 PQ05RF1
D108 V06C
D109 V06C
L114 45µH
L115 45µH
5.7V
VIDEO/YC
S-Y
VIDEO
S-C
BA-1 96P
TO BM BOARD BM-4
1A
1B
1C
2A VIDEO/YC
2B RGB/VIDEO
2C BP CLAMP
3A H.SYNC
3B
3C V.SYNC
4A GND
4B GND
4C S-Y
5A VIDEO
5B GND
5C S-C
6A
6B
6C
7A GND
7B GND
7C GND
8A R <VIDEO>
8B GND
8C +15.5V
9A G <VIDEO>
9B GND
9C +5.7V
10A B <VIDEO>
10B GND
10C -5V
11A GND
11B GND
11C GND
12A
12B
12C
13A
13B
13C
14A
14B
14C
15B
16A GND
16B
17A HUE
17B
17C SHARP
18A GND
18B
18C COL
19A
19B
19C
20A GND
20B
20C
21B
22A VIDEO IDTV
22B
22C
23A NTSC IDTV
23B GND
23C C.BLK
24A CODE 3
24B GND
24C

BA BOARD
(COMPONENT SIDE)

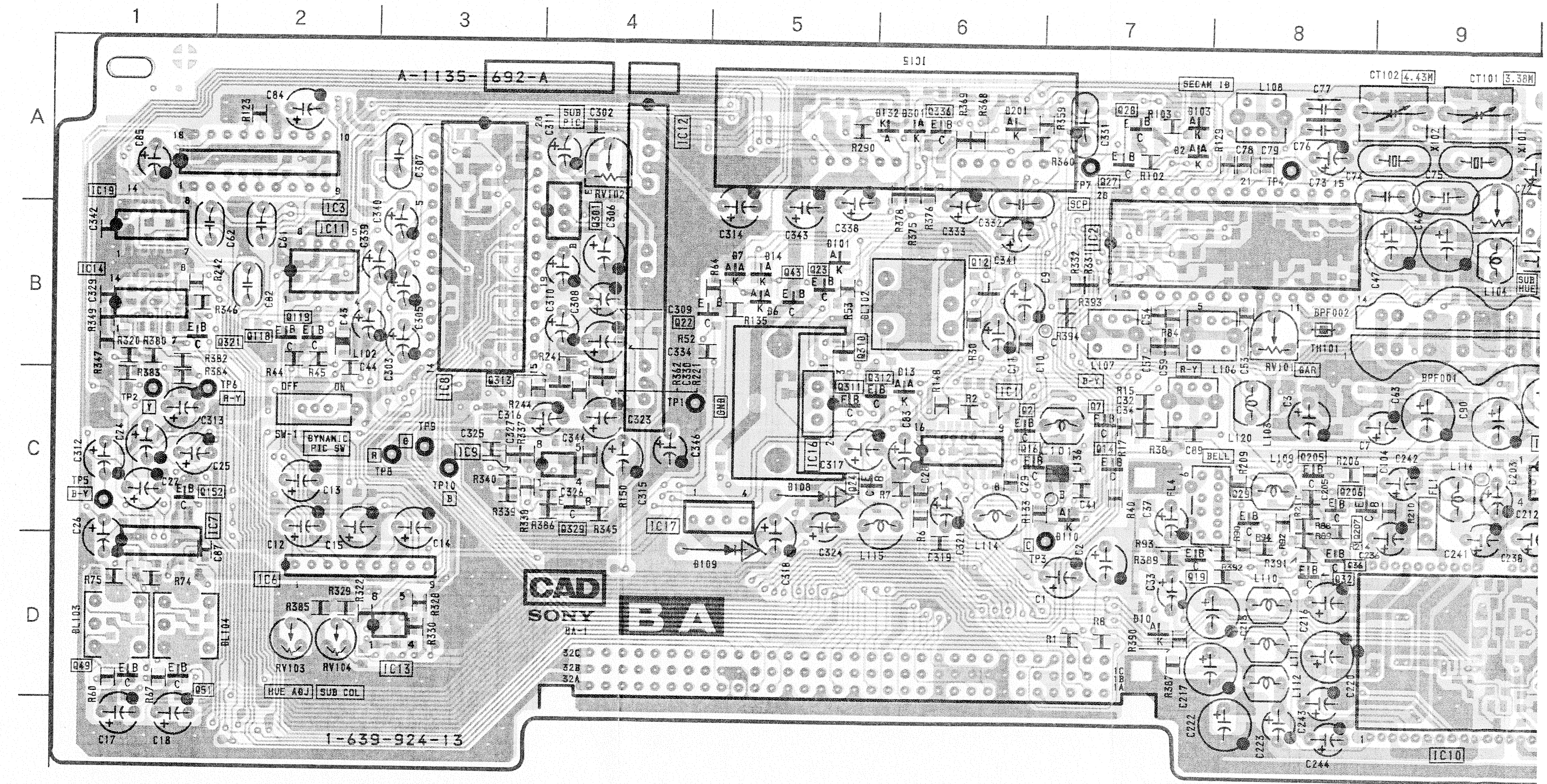
IC	
IC1	C-6
IC2	B-8
IC3	A-2
IC5	C-10
IC6	D-2
IC7	D-1
IC8	B-3
IC9	C-3
IC10	D-9
IC11	B-2
IC12	B-4
IC13	D-3
IC14	B-1
IC15	A-6
IC16	C-5
IC17	C-5
IC19	B-1

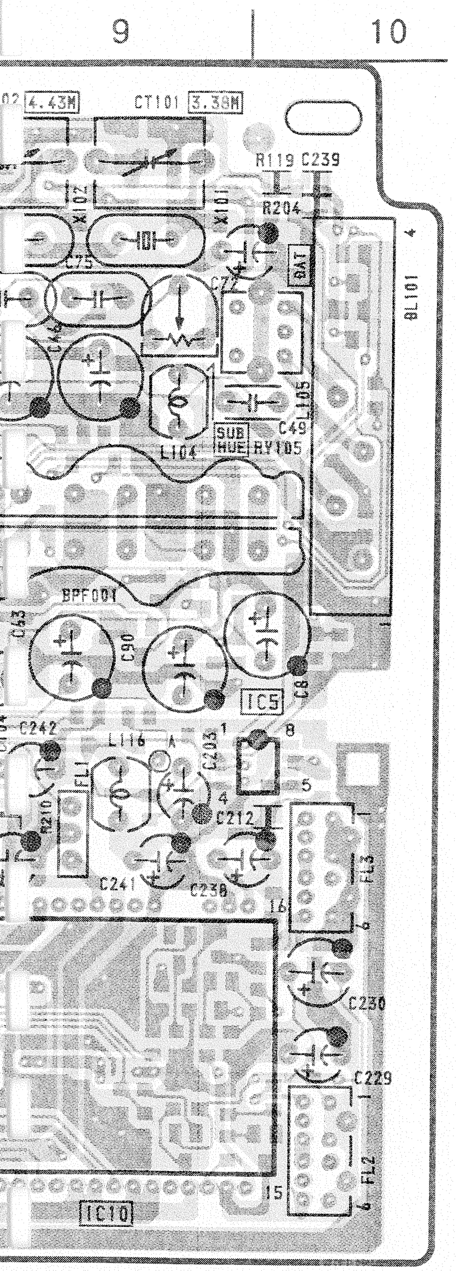
TRANSISTOR	
Q2	C-6
Q7	C-7
Q12	B-6
Q14	C-7
Q16	C-6
Q19	D-7
Q22	B-4
Q23	B-5
Q24	C-5
Q27	A-7
Q28	A-7
Q29	C-8
Q32	D-8
Q36	D-8
Q43	B-5
Q49	D-1
Q51	D-1
Q118	B-2
Q119	B-2
Q152	C-1
Q205	C-8
Q206	C-8
Q207	C-8
Q301	B-4
Q310	B-5
Q311	B-5
Q312	B-6
Q313	C-3
Q321	B-1
Q329	C-4
Q336	A-6

DIODE	
D2	A-7
D6	B-5
D7	B-5
D10	D-7
D13	C-6
D14	B-5
D101	B-5
D103	A-7
D108	C-5
D109	D-5
D110	C-7
D132	A-6
D201	A-6
D301	A-6

VARIABLE RESISTOR	
CT101	A-9
CT102	A-9
RV101	B-8
RV102	A-4
RV103	D-2
RV104	D-2
RV105	B-10

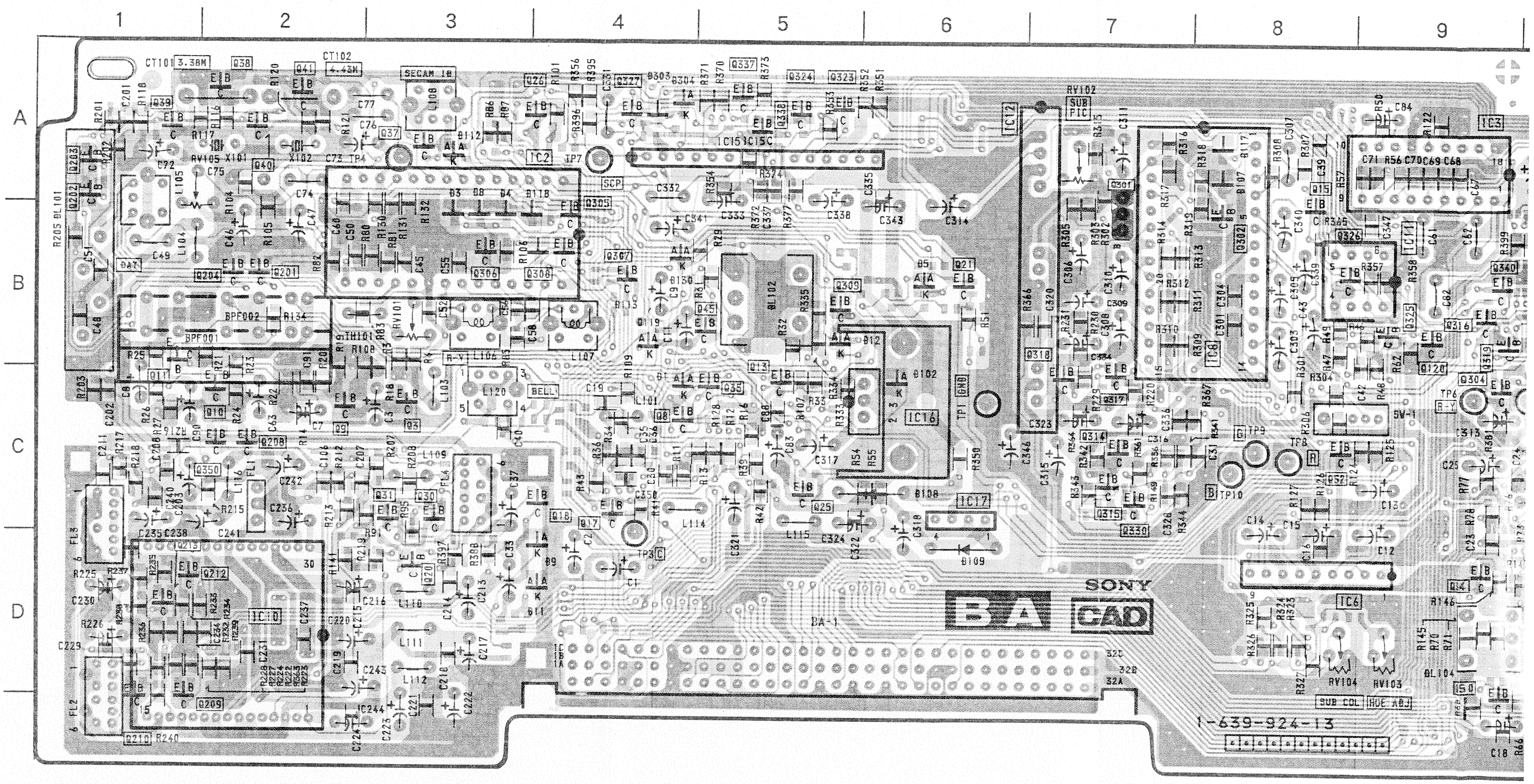
– BA BOARD –
(COMPONENT SIDE)


1
2
3
4
5
6
7
8
9
A
B
C
D
A-1135-692-A
1-639-924-13
CAD
SONY
BA
BA-1
IC1
IC3
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC16
IC17
IC19
CT101 3.58M
CT102 4.43M
RV101
RV102
RV103
RV104
SW-1
DYNAMIC PIC SW
HUE ADJ
SUB COL
SUB PIC
SUB HUE
SECAM ID
BELL
BPF001
BPF002
TH101
X101
X102
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
R-Y
B-Y
GND
32C
32B
32A
OFF
ON


9
10
CT101 3.38M
R119 C239
R204
BL101
BPF001
IC5
IC10
C230
C229
FL2
FL3

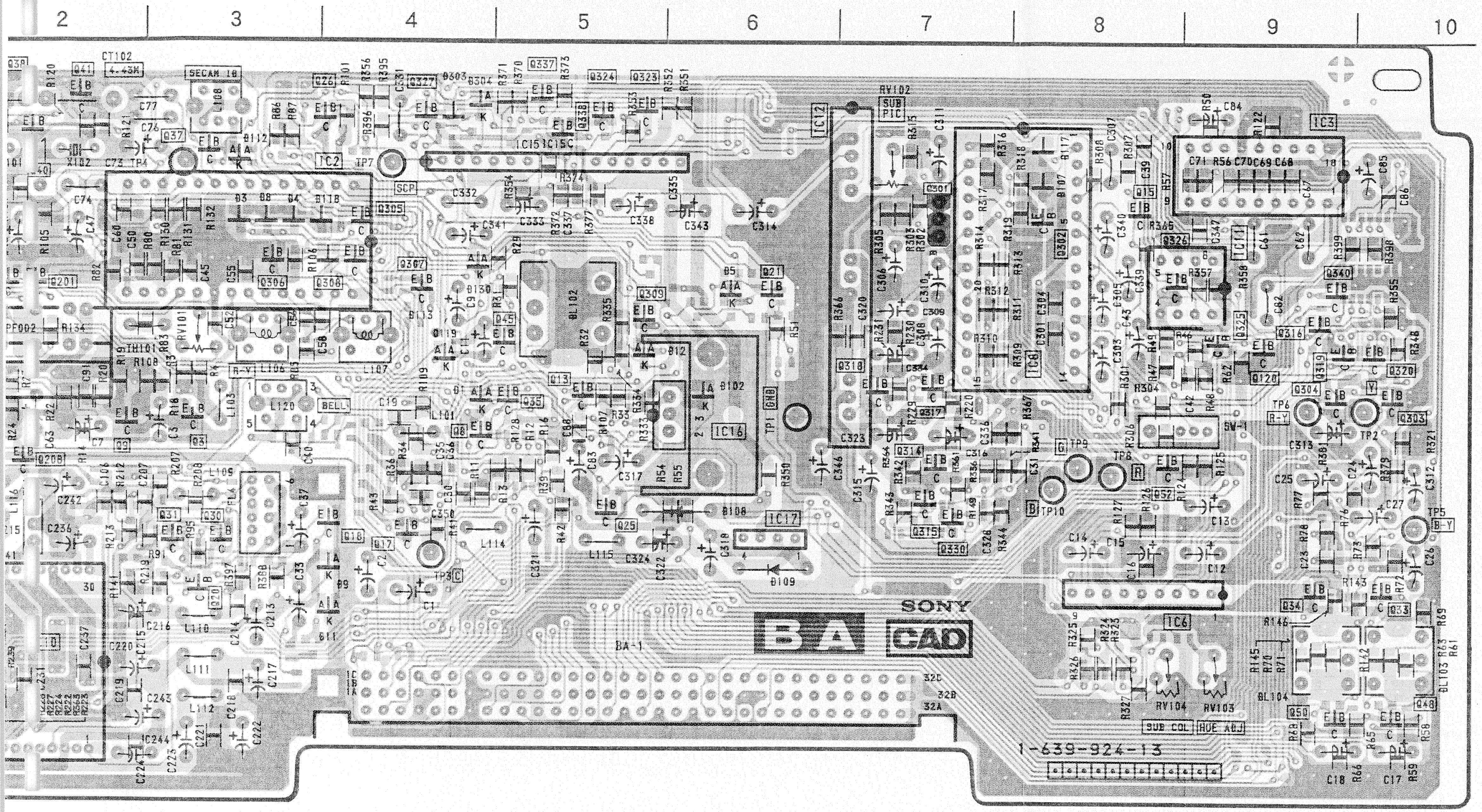
– BA BOARD –

(CONDUCTOR SIDE)


1
2
3
4
5
6
7
8
9
A
B
C
D
CT101 3.38M
CT102 4.43M
SECAM ID
SUB PIC
RV102
IC2
IC3
IC6
IC10
IC16
IC17
BPF001
BPF002
BL101
BL102
BL104
SONY
BA
CAD
BA-1
RV104
RV103
SUB COL
HUE ADJ
1-639-924-13

· ▨ : Pattern from the side whic

· ▨ : Pattern of the rear side.

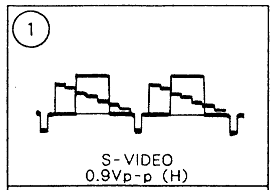

2
3
4
5
6
7
8
9
10
SONY
BA
CAD
BA-1
1-639-924-13
SUB COL
HUE ADJ
SUB PIC
RV102
RV103
RV104
RV101
CT102
4.43M
SECAM 18
BELL
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
IC2
IC3
IC6
IC8
IC11
IC12
IC16
IC17
B-Y
R-Y
SW-1
GND
32A
32B
32C

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

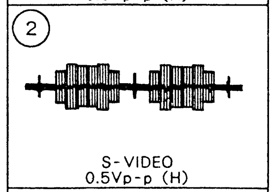
BA BOARD (CONDUCTOR SIDE)

IC	
IC2	B-3
IC3	A-9
IC6	D-8
IC8	B-8
IC10	D-2
IC11	B-9
IC12	B-7
IC15	A-5
IC16	C-6
IC17	C-6
TRANSISTOR	
Q3	C-3
Q8	C-4
Q9	C-2
Q10	C-2
Q11	B-2
Q13	C-5
Q15	B-8
Q17	C-4
Q18	C-4
Q20	D-3
Q21	B-6
Q25	C-5
Q26	A-4
Q30	C-3
Q31	C-3
Q33	D-10
Q34	C-9
Q35	C-5
Q37	A-3
Q38	A-2
Q39	A-1
Q40	A-2
Q41	A-2
Q45	B-5
Q48	D-10
Q50	D-9
Q52	C-8
Q120	B-9
Q201	B-2
Q202	A-1
Q203	A-1
Q204	B-2
Q208	C-2
Q209	D-1
Q210	D-1
Q212	D-1
Q213	D-1
Q301	B-7
Q302	B-8
Q303	C-10
Q304	B-9
Q305	B-4
Q306	B-3
Q307	B-4
Q308	B-4
Q309	B-5
Q314	C-7
Q315	C-7
Q316	B-9
Q317	C-7
Q318	C-7
Q319	B-9
Q320	B-10
Q323	A-5
Q324	A-5
Q325	B-9
Q326	B-8
Q327	A-4
Q330	C-7
Q337	A-5
Q338	A-5
Q340	B-9
Q350	C-2
DIODE	
D1	C-4
D3	B-3
D4	B-3
D5	B-6
D8	B-3
D9	D-4
D11	D-4
D12	B-6
D102	C-6
D107	A-8
D108	C-6
D109	D-6
D112	A-3
D113	B-4
D117	A-8
D118	B-4
D119	B-4
D130	B-4
D303	A-4
D304	A-4
VARIABLE RESISTOR	
CT101	A-1
CT102	A-2
RV101	B-3
RV102	A-7
RV103	D-9
RV104	D-8
RV105	A-2

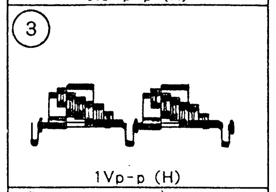
BB BOARD(1/2)


①

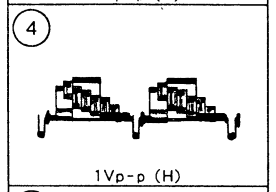
S-VIDEO
0.9Vp-p (H)


②

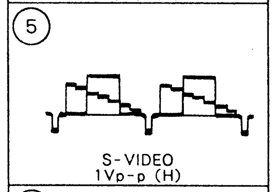
S-VIDEO
0.5Vp-p (H)


③

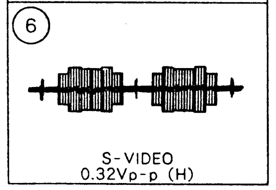
1Vp-p (H)


④

1Vp-p (H)


⑤

S-VIDEO
1Vp-p (H)


⑥

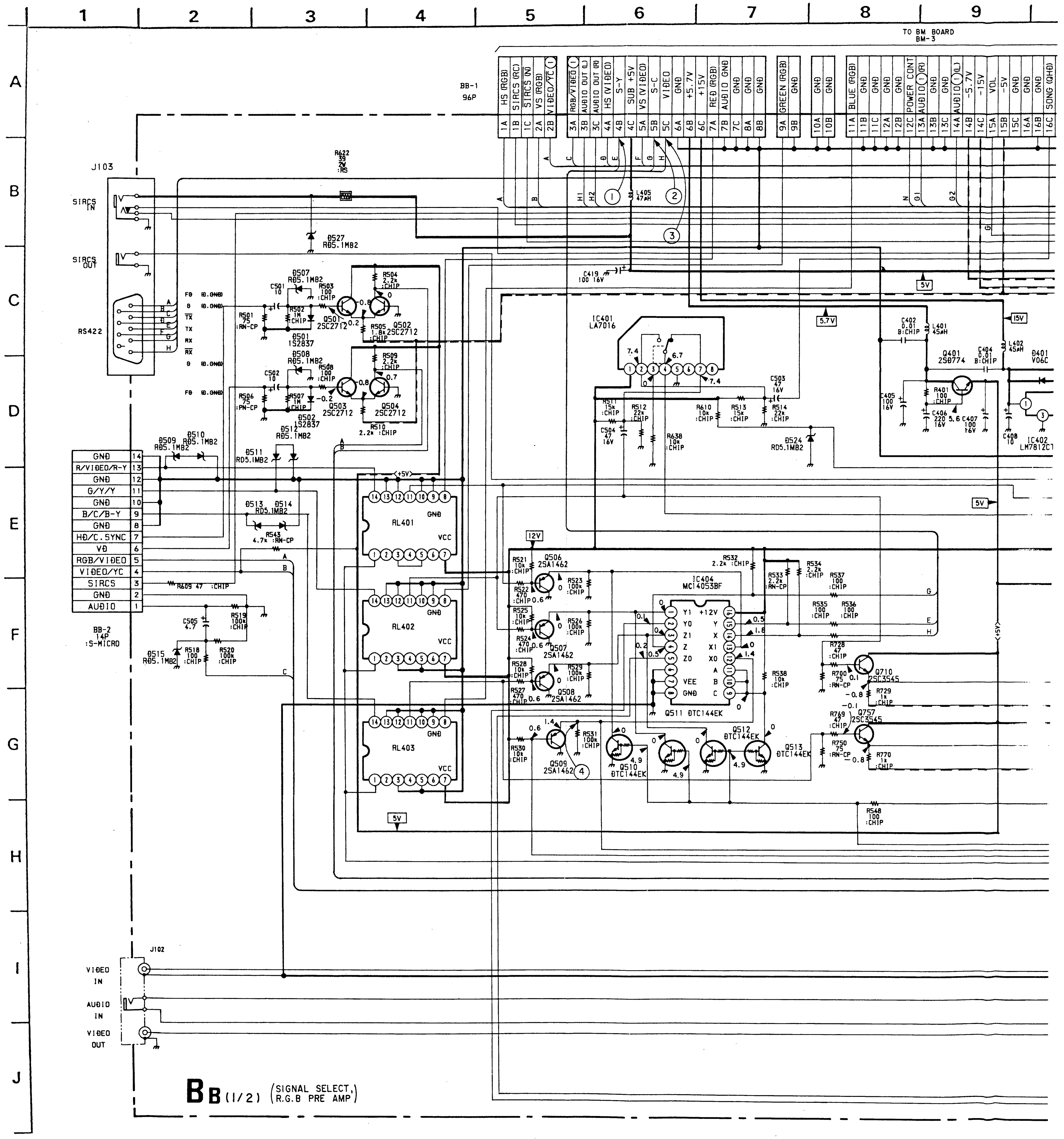
S-VIDEO
0.32Vp-p (H)

BB (1/2)	IC401	LA7016	SYNC. SW-1	531	DTC144EK	MODE SW-12
	402	LM7812CT	+12V REG	532	2SC2712	AUDIO AMP-4
	403	LM7912CT	–12V REG	533	2SC2712	AUDIO BUFF-3
	404	MC14053BF	SIG. SW	534	2SD789-4	MODE SW-13
	405	SN74HC157ANS	MODE SW-1	535	DTC144EK	MODE SW-14
	407	SN74HC157ANS	SYNC SW-2	536	DTC144EK	MODE SW-15
	408	HD14053BFP	MODE SW-2	537	DTC144EK	MODE SW-16
	409	HD14053BFP	MODE SW-3	538	DTC144EK	MODE SW-17
	412	μPC1406HA	AUDIO ATT.	540	DTC144EK	MODE SW-18
	422	μPC393G2	MODE ENCODER-1	545	2SA1162	MODE SW-23
	423	SN74HC32ANS	MODE ENCODER-2	546	DTC144EK	MODE SW-24
	424	μPC393G2	MODE ENCODER-3	548	DTC144EK	MODE SW-26
				549	DTC144EK	MODE SW-27
	Q401	2SD774	+5REG.	550	DTC144EK	MODE SW-28
	402	2SB734	–5REG.	551	DTC144EK	MODE SW-29
	403	DTC144EK	POWER CONT-1	552	DTC144EK	MODE SW-30
	404	2SC2712	POWER CONT-2	553	2SC2712	AUDIO BUFF-2
	405	DTC144EK	POWER CONT-3	710	2SC3545	G BUFF-5
	450	2SC2712	SIRCS SW-1	741	DTC144EK	MODE SW-31
	451	2SC2712	SIRCS SW-2	757	2SC3545	B BUFF-7
	452	2SC2712	SIRCS SW-3			
	453	DTC144EK	SIRCS SW-4	D401	V06C	+12V PROT
	454	DTC144EK	SIRCS SW-5	402	V06C	–12V PROT
	456	2SC2712	SIRCS SW-6	450	1S2837	SIRCS OR
	457	2SA1162	SIRCS SW-7	451	1S2837	AUDIO PROT-1
	501	2SC2712	H.SYNC SW-1	452	RD2.4MB	LEBEL SHIFT
	502	2SC2712	H.SYNC SW-2	501	1S2837	H.SYNC CLAMP
	503	2SC2712	V.SYNC SW-1	502	1S2837	V.SYNC CLAMP
	504	2SC2712	V.SYNC SW-2	503	1S2837	VOLTAGE PROT.
	506	2SA1462	R BUFF.	504	RD5.1M-B2	AUDIO PROT-2
	507	2SA1462	G BUFF.	506	RD5.1M-B2	POW CONT.
	508	2SA1462	B BUFF.	507	RD5.1M-B2	H.SYNC PROT
	509	2SA1462	VIDEO BUFF.	508	RD5.1M-B2	V.SYNC PROT
	510	DTC144EK	MODE SW-1	509	RD5.1M-B2	R PROT-1
	511	DTC144EK	MODE SW-2	510	RD5.1M-B2	R PROT-2
	512	DTC144EK	MODE SW-3	511	RD5.1M-B2	G PROT-1
	513	DTC144EK	MODE SW-4	512	RD5.1M-B2	G PROT-2
	514	DTC144EK	MODE SW-5	513	RD5.1M-B2	B PROT-1
	515	2SC2712	MODE SW-6	514	RD5.1M-B2	B PROT-2
	516	2SA1462	Y BUFF-1	515	RD5.1M-B2	AUDIO PROT-4
	517	2SA1462	C BUFF-1	516	RD13M-B2	Y PROT.
	518	2SC2712	AUDIO BUFF-1	518	RD13M-B2	C PROT.
	519	2SC2712	AUDIO BUFF-2	520	RD5.1M-B2	S SW PROT-1
	520	DTC144EK	MODE SW-7	521	RD5.1M-B2	S SW PROT-2
	521	DTC144EK	MODE SW-8	522	RD13M-B2	VIDEO PROT-1
	522	2SC2712	VIDEO AMP-1	523	RD13M-B2	VIDEO PROT-2
	523	2SC2712	VIDEO AMP-2	524	RD5.1M-B2	HD SEL PROT.
	524	2SC2712	VIDEO BUFF-2	525	RD2.4MB	LEBEL SHIFT
	525	2SC2712	AUDIO AMP-1	526	1S2837	MODE SW-1
	526	2SC2712	AUDIO AMP-2	527	RD5.1M-B2	SUB5V PROT
	527	2SC2712	AUDIO AMP-3	528	1S2837	MODE SW-2
	528	DTC144EK	MODE SW-9	529	RD3.3MB2	LEBEL SHIFT
	529	DTC144EK	MODE SW-10	530	1S2837	AUDIO MUTE
	530	DTC144EK	MODE SW-11			

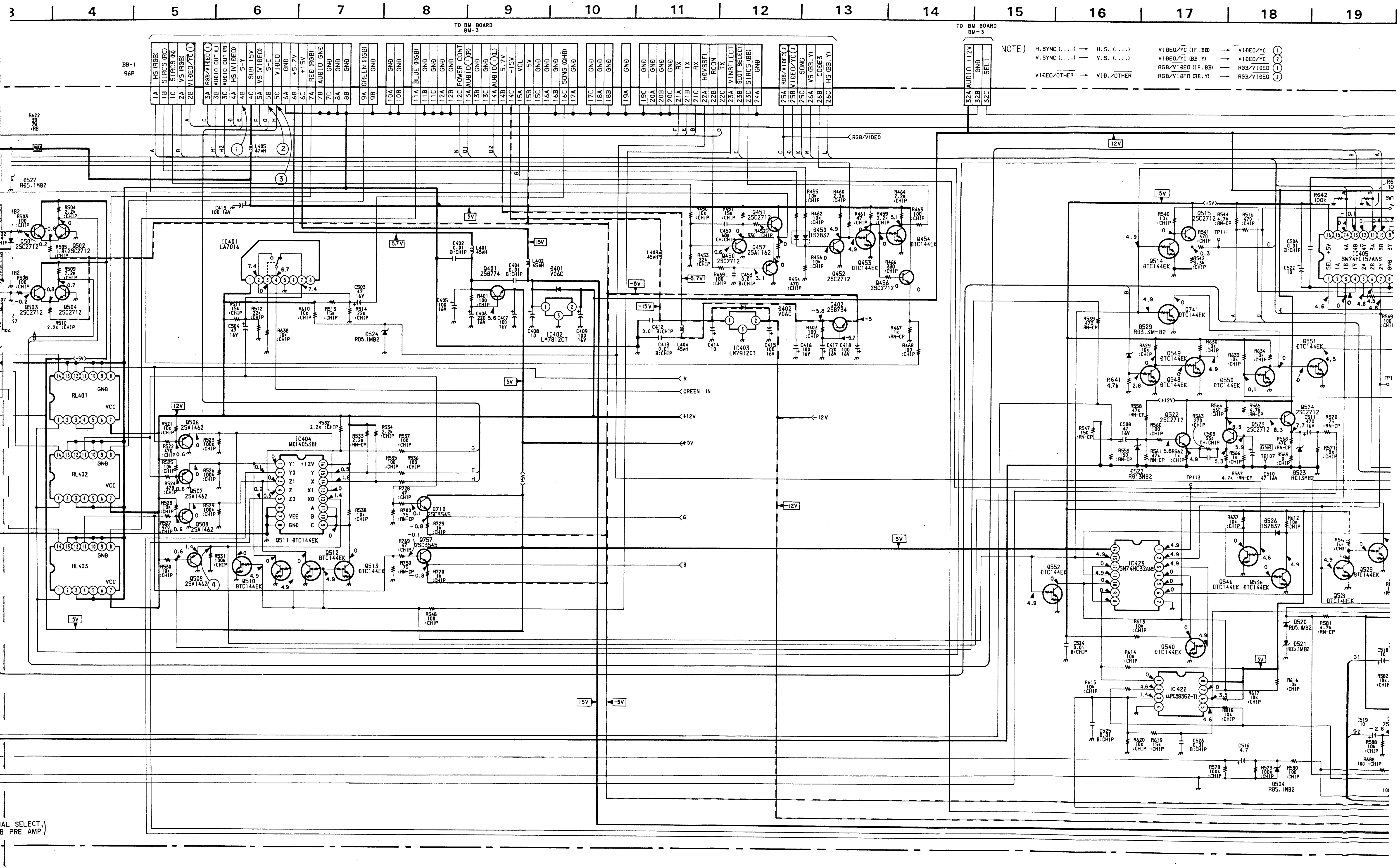
BB BOARD (1/2)

REF.	Pin No.	NTSC 3.58	S-VIDEO
IC404	②	0.1	1.6
	④	0.5	1.4
	⑤	0.1	1.4
	⑫	1.4	0.1
	⑭	1.8	0.5
	⑮	0.5	2
IC405	⑥	4.5	0
	⑦	4.8	0
IC408	③	4.5	0
	④	4.5	0
	⑩	4.6	4.8
	⑪	4.5	4.6
IC423	②	4.9	0

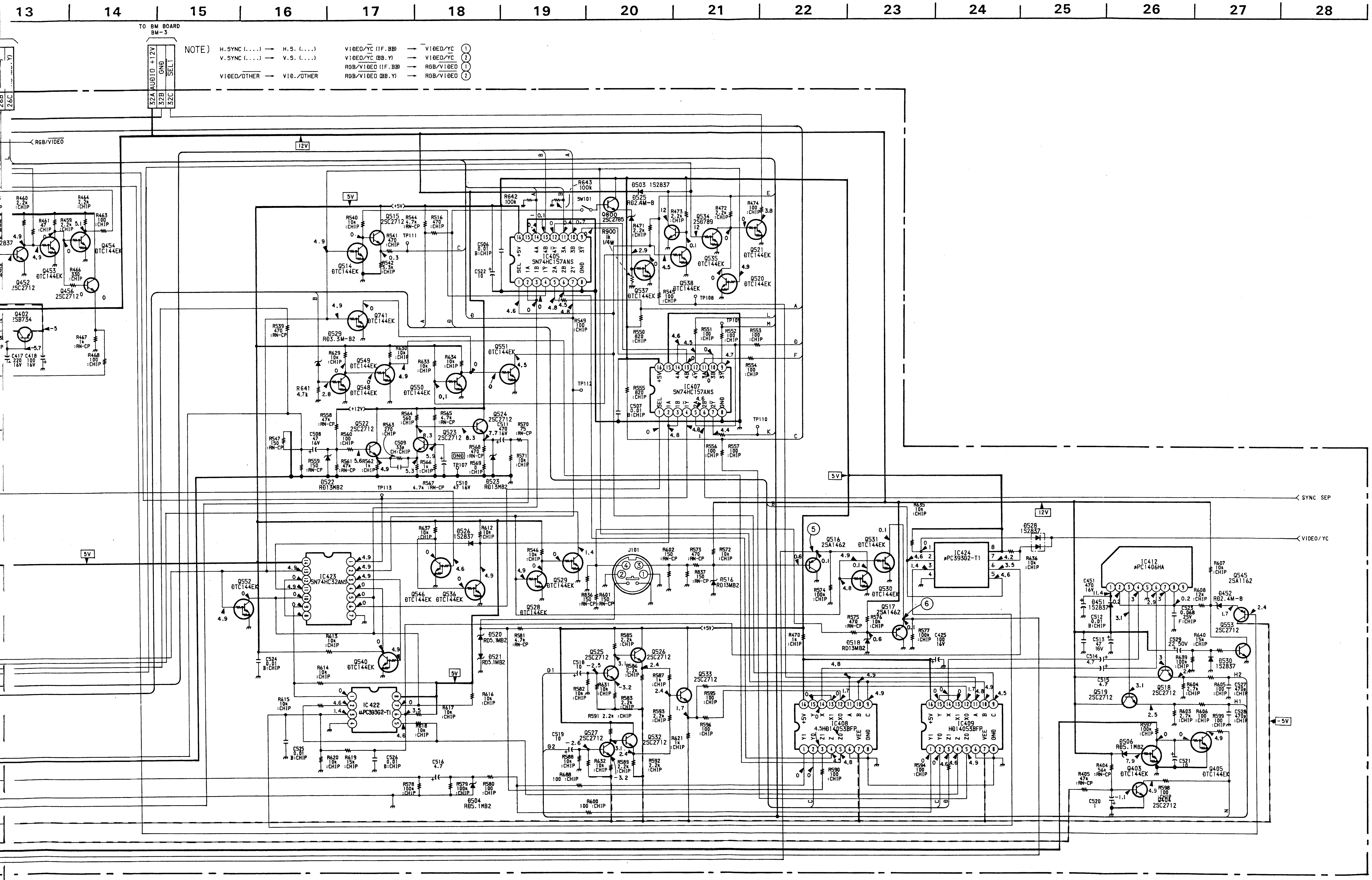
REF.		NTSC 3.58	S-VIDEO
Q509	B	0.6	0.6
	C	–	–
	E	1.4	0
Q516	B	0.6	0.6
	C	0.1	1.6
	E	–	–
Q517	B	0.6	0.6
	C	0.1	1.4
	E	–	–
Q528	B	4.9	0
	C	0	4.1
	E	–	–
Q529	B	0	1.4
	C	4.1	0
	E	–	–
Q530	B	4.9	0
	C	0.1	1.6
	E	–	–
Q531	B	4.9	0
	C	0.1	1.4
	E	–	–


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
TO BM BOARD
BM-3
BB-1
96P
HS (RGB)
SIRCS (RC)
SIRCS (N)
VS (RGB)
VIDEO/YC ①
RGB/VIDEO ①
AUDIO OUT (L)
AUDIO OUT (R)
HS (VIDEO)
S-Y
SUB +5V
VS (VIDEO)
S-C
VIDEO
GND
+5.7V
+15V
RED (RGB)
AUDIO GND
GREEN (RGB)
BLUE (RGB)
POWER CONT
AUDIO ① (R)
AUDIO ① (L)
-5.7V
-15V
VOL
-5V
SONG (QHD)
1A
1B
1C
2A
2B
3A
3B
3C
4A
4B
4C
5A
5B
5C
6A
6B
6C
7A
7B
7C
8A
8B
9A
9B
10A
10B
11A
11B
11C
12A
12B
12C
13A
13B
13C
14A
14B
14C
15A
15B
15C
16A
16B
16C
J103
SIRCS IN
SIRCS OUT
RS422
L405 47μH
IC401 LA7016
C419 100 16V
Q401 2SD774
D401 V06C
IC402 LM7812CT
Q501 2SC2712
Q502 2SC2712
Q503 2SC2712
Q504 2SC2712
RL401
RL402
RL403
IC404 MC14053BF
Q506 2SA1462
Q507 2SA1462
Q508 2SA1462
Q509 2SA1462
Q510 DTC144EK
Q511 DTC144EK
Q512 DTC144EK
Q513 DTC144EK
Q710 2SC3545
Q757 2SC3545
GND
R/VIDEO/R-Y
G/Y/Y
B/C/B-Y
HD/C.SYNC
VD
RGB/VIDEO
VIDEO/YC
SIRCS
AUDIO
BB-2
14P
:S-MICRO
J102
VIDEO IN
AUDIO IN
VIDEO OUT
5V
12V
15V
5.7V

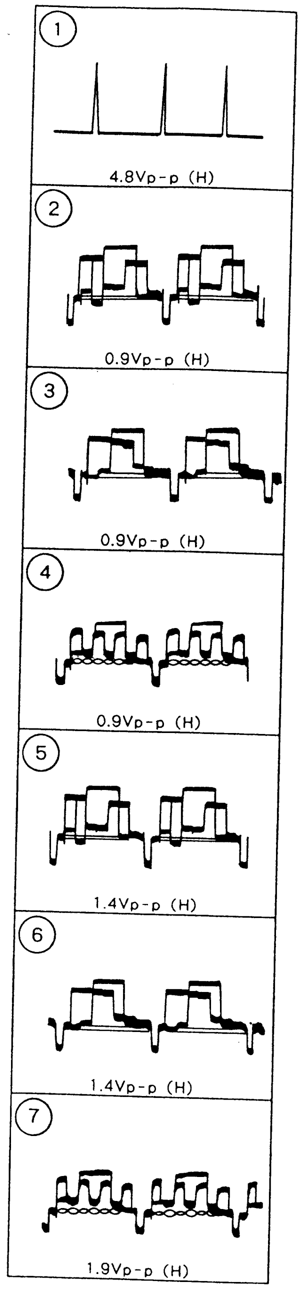
BB (1/2) (SIGNAL SELECT, R.G.B PRE AMP)


4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
TO BM BOARD BM-3
BB-1 96P
HS (RGB) 1A
SIRCS (RC) 1B
SIRCS (N) 1C
VS (RGB) 2A
VIDEO/YC ① 2B
RGB/VIDEO ① 3A
AUDIO OUT (L) 3B
AUDIO OUT (R) 3C
HS (VIDEO) 4A
S-Y 4B
SUB +5V 4C
VS (VIDEO) 5A
S-C 5B
VIDEO 5C
GND 6A
+5.7V 6B
+15V 6C
RED (RGB) 7A
AUDIO GND 7B
GND 7C
GND 8A
GND 8B
GREEN (RGB) 9A
GND 9B
GND 10A
GND 10B
BLUE (RGB) 11A
GND 11B
GND 11C
GND 12A
GND 12B
POWER CONT 12C
AUDIO ① (R) 13A
GND 13B
GND 13C
AUDIO ① (L) 14A
-5.7V 14B
-15V 14C
VOL 15A
-5V 15B
GND 15C
GND 16A
GND 16B
SONG (QHD) 16C
GND 17A
GND 17C
GND 18A
GND 18B
GND 19A
GND 19C
GND 20A
GND 20B
GND 20C
RX 21A
TX 21B
RX 21C
HDVSSEL 22A
RCON 22B
TX 22C
VINSELECT 23A
SLOT SELECT 23B
SIRCS (BB) 23C
GND 24A
RGB/VIDEO ② 25A
VIDEO/YC ② 25B
SONG 25C
VS (BB.Y) 26A
CODE3 26B
HS (BB.Y) 26C
AUDIO +12V 32A
GND 32B
SEL1 32C
NOTE) H.SYNC (....) → H.S. (....)
V.SYNC (....) → V.S. (....)
VIDEO/OTHER → VID./OTHER
VIDEO/YC (IF.BB) → VIDEO/YC ①
VIDEO/YC (BB.Y) → VIDEO/YC ②
RGB/VIDEO (IF.BB) → RGB/VIDEO ①
RGB/VIDEO (BB.Y) → RGB/VIDEO ②
A B C D E F G H H1 H2 N G1 G2 K M L
① ② ③ ④
L405 47μH
RGB/VIDEO
12V
R622 39 2W :RS
D527 RD5.1MB2
R504 2.2k :CHIP
R503 100 :CHIP
Q501 2SC2712
R505 1.8k
Q502 2SC2712
R509 2.2k :CHIP
R508 100 :CHIP
Q503 2SC2712
Q504 2SC2712
R510 2.2k :CHIP
C419 100 16V
IC401 LA7016
R511 15k :CHIP
R512 22k :CHIP
C504 47 16V
R638 10k :CHIP
R610 10k :CHIP
R513 15k :CHIP
R514 22k :CHIP
C503 47 16V
D524 RD5.1MB2
5V
5.7V
15V
C402 0.01 B:CHIP
L401 45μH
Q401 2SD774
C404 0.01 B:CHIP
L402 45μH
D401 V06C
R401 100 :CHIP
C405 100 16V
C406 220 16V
C407 100 16V
C408 10
IC402 LM7812CT
C409 100 16V
-5V
-15V
5.7V
L403 45μH
C412 0.01 B:CHIP
C413 0.01 B:CHIP
L404 45μH
C414 10
IC403 LM7912CT
C415 100 16V
D402 V06C
Q402 2SB734
R403 100 :CHIP
C416 100 16V
C417 220 16V
C418 100 16V
R450 10k :CHIP
R451 15k :CHIP
Q451 2SC2712
C450 68p CH:CHIP
R4520 330 :CHIP
Q450 2SC2712
R453 22k :CHIP
R469 100 :CHIP
C453 0.01 B:CHIP
Q457 2SA1162
R455 10k :CHIP
R460 2.2k :CHIP
R462 10k :CHIP
D450 1S2837
R456 10k :CHIP
R454 470 :CHIP
Q452 2SC2712
R461 47 :CHIP
R459 2.2k :CHIP
Q453 DTC144EK
R464 2.2k :CHIP
R463 100 :CHIP
Q454 DTC144EK
R466 330 :CHIP
Q456 2SC2712
R467 1k :RN-CP
R468 100 :CHIP
R
GREEN IN
+12V
+5V
G
B
-12V
RL401 GND VCC
RL402 GND VCC
RL403 GND VCC
R521 10k :CHIP
Q506 2SA1462
R522 470 :CHIP
R523 100k :CHIP
R525 10k :CHIP
R524 470 :CHIP
R526 100k :CHIP
Q507 2SA1462
R528 10k :CHIP
R527 470 :CHIP
R529 100k :CHIP
Q508 2SA1462
R530 10k :CHIP
Q509 2SA1462
R531 100k :CHIP
Q510 DTC144EK
Q512 DTC144EK
Q513 DTC144EK
Q511 DTC144EK
IC404 MC14053BF
Y1 +12V Y0 X Z1 X1 Z X0 Z0 A VEE B GND C
R532 2.2k :CHIP
R533 2.2k :RN-CP
R534 2.2k :CHIP
R537 100 :CHIP
R535 100 :CHIP
R536 100 :CHIP
R538 100 :CHIP
R728 47 :CHIP
R700 75 :RN-CP
Q710 2SC3545
R729 1k :CHIP
R769 47 :CHIP
Q757 2SC3545
R750 75 :RN-CP
R770 1k :CHIP
R548 100 :CHIP
15V
-5V
R540 10k :CHIP
Q515 2SC2712
R544 4.7k :RN-CP
R516 470 :CHIP
R541 470 :CHIP
TP111
R542 3.3k :CHIP
Q514 DTC144EK
C506 0.01 B:CHIP
C522 10
R642 100k
IC405 SN74HC157ANS
SEL +5V 1A 1B 1Y 2A 2B 2Y 3A 3B 3Y 4A 4B 4Y GND
SW1
R549 100 :CHIP
Q741 DTC144EK
D529 RD3.3M-B2
R539 470 :RN-CP
R629 10k :CHIP
Q549 DTC144EK
R630 10k :CHIP
R633 10k :CHIP
R634 10k :CHIP
Q551 DTC144EK
R641 4.7k
Q548 DTC144EK
Q550 DTC144EK
TP1
R558 47k :RN-CP
Q522 2SC2712
R563 270 :CHIP
R564 560 :CHIP
R565 4.7k :RN-CP
Q524 2SC2712
C511 470 16V
R570 75 :RN-CP
R547 150 :RN-CPL
C508 47 16V
R560 100 :CHIP
C509 33p CH:CHIP
Q523 2SC2712
R568 470 :RN-CP
R569 0 :CHIP
R559 150 :RN-CP
R561 47k :RN-CP
R562 5.6k :CHIP
R566 1k :CHIP
GND
TB107
R571 1k :CHIP
D522 RD13MB2
TP113
R567 4.7k :RN-CP
C510 47 16V
D523 RD13MB2
R637 10k :CHIP
D526 1S2837
R612 10k :CHIP
Q546 DTC144EK
Q536 DTC144EK
Q529 DTC144EK
Q528 DTC144EK
Q552 DTC144EK
IC423 SN74HC32ANS
R613 10k :CHIP
Q540 DTC144EK
D520 RD5.1MB2
R581 4.7k :RN-CP
D521 RD5.1MB2
C524 0.01 B:CHIP
R614 10k :CHIP
C518 10
IC422 μPC393G2-T1
R615 10k :CHIP
R616 10k :CHIP
R617 10k :CHIP
R618 10k :CHIP
R582 10k :CHIP
C525 0.01 B:CHIP
R620 10k :CHIP
R619 15k :CHIP
C526 0.01 B:CHIP
C519 10
R588 10k :CHIP
R688 100 :CHIP
C516 4.7
R578 100k :CHIP
R579 100k :CHIP
R580 100 :CHIP
D504 RD5.1MB2
IAL SELECT, B PRE AMP

NOTE)
H.SYNC (....) → H.S. (....)
V.SYNC (....) → V.S. (....)
VIDEO/$\overline{\text{OTHER}}$ → VID./$\overline{\text{OTHER}}$
VIDEO/$\overline{\text{YC}}$ (IF.BB) → $\overline{\text{VIDEO}}$/YC ①
VIDEO/$\overline{\text{YC}}$ (BB.Y) → VIDEO/$\overline{\text{YC}}$ ②
RGB/$\overline{\text{VIDEO}}$ (IF.BB) → RGB/$\overline{\text{VIDEO}}$ ①
RGB/$\overline{\text{VIDEO}}$ (BB.Y) → RGB/$\overline{\text{VIDEO}}$ ②


13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
TO BM BOARD
BM-3
AUDIO +12V
GND
SEL1
32A
32B
32C
RGB/VIDEO
12V
5V
SYNC SEP
VIDEO/YC
-5V
IC405 SN74HC157ANS
IC407 SN74HC157ANS
IC423 SN74HC32ANS
IC422 µPC393G2-T1
IC424 µPC393G2-T1
IC408 4.5H014053BFP
IC409 H014053BFP
IC412 µPC1406HA
J101
SW101
Q515 2SC2712
Q514 DTC144EK
Q741 DTC144EK
Q549 DTC144EK
Q548 DTC144EK
Q550 DTC144EK
Q551 DTC144EK
Q522 2SC2712
Q523 2SC2712
Q524 2SC2712
Q800 2SC2785
Q534 2SB789
Q535 DTC144EK
Q537 DTC144EK
Q538 DTC144EK
Q520 DTC144EK
Q521 DTC144EK
Q552 DTC144EK
Q540 DTC144EK
Q546 DTC144EK
Q536 DTC144EK
Q529 DTC144EK
Q528 DTC144EK
Q525 2SC2712
Q526 2SC2712
Q527 2SC2712
Q532 2SC2712
Q533 2SC2712
Q516 2SA1462
Q531 DTC144EK
Q530 DTC144EK
Q517 2SA1462
Q545 2SA1162
Q553 2SC2712
Q518 2SC2712
Q519 2SC2712
Q403 DTC144EK
Q405 DTC144EK
Q404 2SC2712
Q452 2SC2712
Q453 DTC144EK
Q454 DTC144EK
Q456 2SC2712
Q402 2SB734
D503 1S2837
D525 RD2.4M-B
D529 RD3.3M-B2
D522 RD13MB2
D523 RD13MB2
D526 1S2837
D520 RD5.1MB2
D521 RD5.1MB2
D504 RD5.1MB2
D516 RD13MB2
D518 RD13MB2
D528 1S2837
D451 1S2837
D452 RD2.4M-B
D530 1S2837
D506 RD5.1MB2
TP111
TP108
TP112
TP110
TP107
TP113
A
B
C
D
E
F
G1
G2
H1
H2
K
L
M
N
⑤
⑥

BB BOARD(2/2)

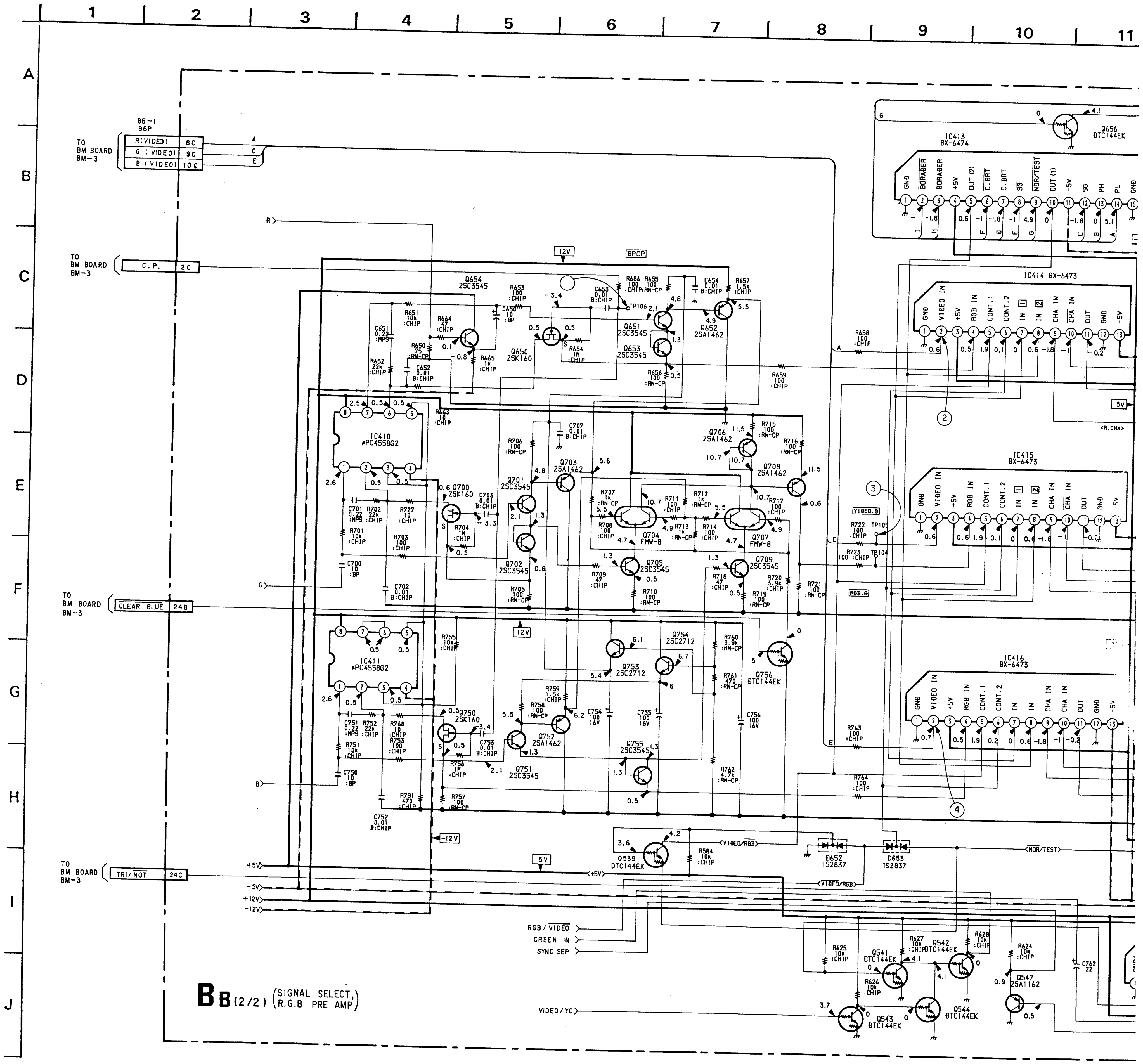


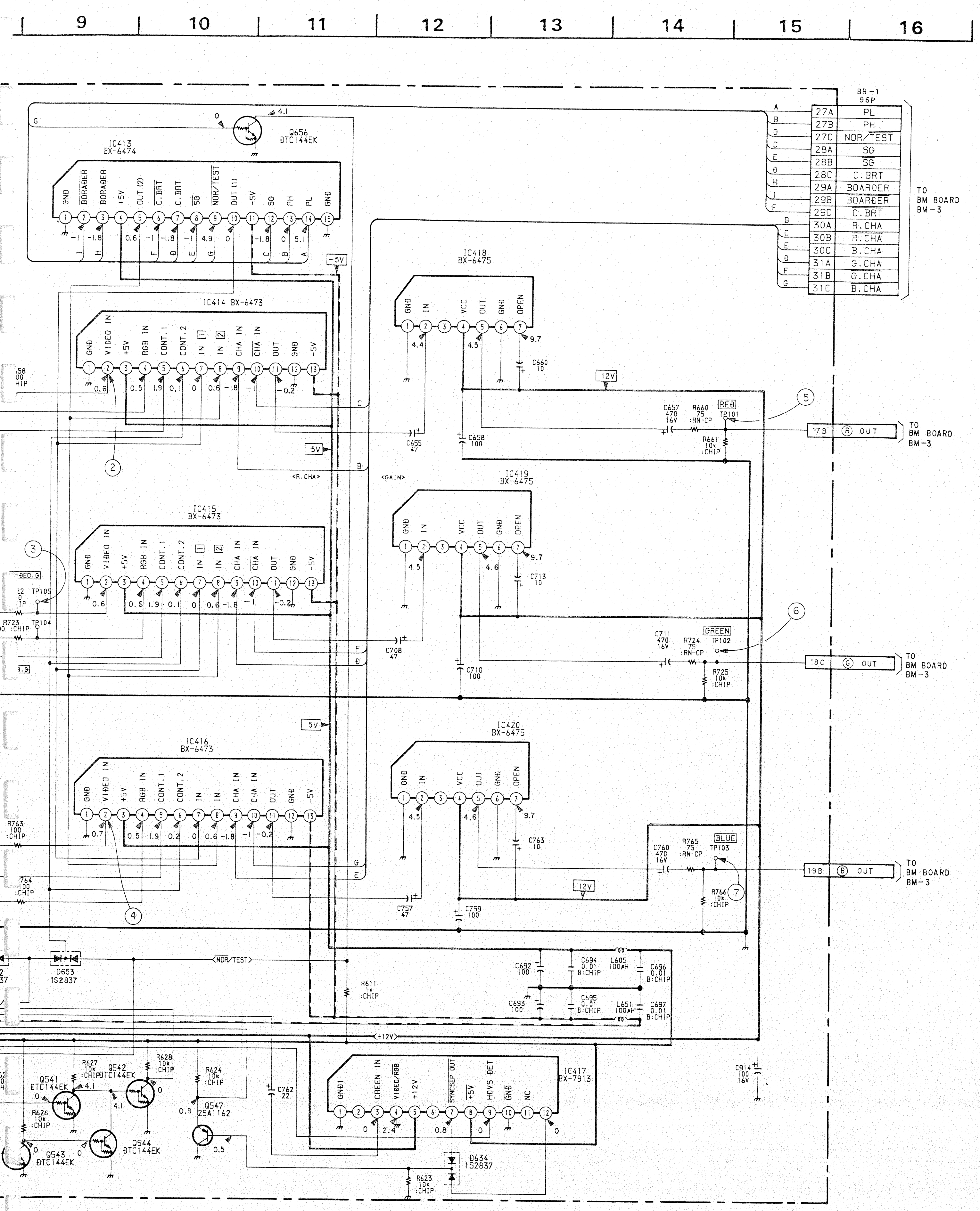
BB (2/2)	IC410	µPC4558G2	SIG. CLAMP-1
	411	µPC4558G2	SIG. CLAMP-2
	413	BX-6474	TEST SIG. GEN.
	414	BX-6473	R SIG. SW
	415	BX-6473	G SIG. SW
	416	BX-6473	B SIG. SW
	417	BX-7913	S ON G SYNC SEP.
	418	BX-6475	R AMP.
	419	BX-6475	G AMP.
	420	BX-6475	B AMP.
	Q539	DTC144EK	MODE SW-17
	541	DTC144EK	MODE SW-19
	542	DTC144EK	MODE SW-20
	543	DTC144EK	MODE SW-21
	544	DTC144EK	MODE SW-22
	547	2SA1162	MODE SW-25
	650	2SK160	R CLAMP
	651	2SC3545	R BUFF-1
	652	2SA1462	R BUFF-2
	653	2SC3545	R BUFF-3
	654	2SC3545	R BUFF-4
	656	DTC144EK	MODE SW-31
	700	2SK160	G CLAMP
	701	2SC3545	G BUFF-1
	702	2SC3545	G BUFF-2
	703	2SA1462	G BUFF-3
	704	FMW-8	CB SW-1
	705	2SC3545	CB SW-2
	706	2SA1462	CB SW-3
	707	FMW-8	CB SW-4
	708	2SA1462	G BUFF-4
	709	2SC3545	CB SW-5
	750	2SK160	B CLAMP
	751	2SC3545	B BUFF-1
	752	2SA1462	B BUFF-2
	753	2SC2712	B BUFF-3
	754	2SC2712	B BUFF-4
	755	2SC3545	B BUFF-5
	756	DTC144EK	B BUFF-6
	D634	1S2837	MODE OR-1
	652	1S2837	MODE OR-2
	653	1S2837	MODE OR-3

BB BOARD (2/2)

REF.	Pin No.	NTSC 3.58	S-VIDEO
IC414	②	0.6	3.1
	⑪	− 0.2	2.2
IC415	②	0.6	3.1
	⑪	− 0.2	2.2
IC416	②	0.7	3.1
	⑪	− 0.2	2.3

REF.		NTSC 3.58	S-VIDEO
Q539	B	3.6	2.4
	C	4.2	1.9
	E	−	−
Q656	B	0	4.9
	C	4.1	0
	E	−	−


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
BB (2/2) (SIGNAL SELECT, R.G.B PRE AMP)
TO BM BOARD BM-3
BB-1 96P
R(VIDEO) 8C
G (VIDEO) 9C
B (VIDEO) 10C
C.P. 2C
CLEAR BLUE 24B
TRI/NOT 24C
12V
BPCP
5V
-12V
+5V
-5V
+12V
-12V
RGB / VIDEO
CREEN IN
SYNC SEP
VIDEO / YC
IC413 BX-6474
IC414 BX-6473
IC415 BX-6473
IC416 BX-6473
IC410 µPC4558G2
IC411 µPC4558G2
GND
BORAGER
+5V
OUT (2)
C.BRT
SG
NOR/TEST
OUT (1)
-5V
PH
PL
VIDEO IN
RGB IN
CONT.1
CONT.2
IN
CHA IN
OUT
Q654 2SC3545
Q651 2SC3545
Q652 2SA1462
Q653 2SC3545
Q650 2SK160
Q700 2SK160
Q701 2SC3545
Q702 2SC3545
Q703 2SA1462
Q704 FMW-8
Q705 2SC3545
Q706 2SA1462
Q707 FMW-8
Q708 2SA1462
Q709 2SC3545
Q750 2SK160
Q751 2SC3545
Q752 2SA1462
Q753 2SC2712
Q754 2SC2712
Q755 2SC3545
Q756 DTC144EK
Q539 DTC144EK
Q541 DTC144EK
Q542 DTC144EK
Q543 DTC144EK
Q544 DTC144EK
Q547 2SA1162
Q656 DTC144EK
D652 1S2837
D653 1S2837
TP106
TP105
TP104
VIDEO.B
RGB.B
<R.CHA>
<VIDEO/RGB>
<NOR/TEST>


9
10
11
12
13
14
15
16
IC413
BX-6474
Q656
DTC144EK
GND
BOARDER
BOARDER
+5V
OUT (2)
C.BRT
C.BRT
SG
NOR/TEST
OUT (1)
-5V
SG
PH
PL
IC414 BX-6473
IC415
BX-6473
IC416
BX-6473
VIDEO IN
RGB IN
CONT.1
CONT.2
CHA IN
OUT
IC418
BX-6475
IC419
BX-6475
IC420
BX-6475
VCC
OPEN
IC417
BX-7913
GND1
GREEN IN
VIDEO/RGB
+12V
SYNCSEP OUT
HDVS DET
NC
BB-1
96P
27A PL
27B PH
27C NOR/TEST
28A SG
28B SG
28C C.BRT
29A BOARDER
29B BOARDER
29C C.BRT
30A R.CHA
30B R.CHA
30C B.CHA
31A G.CHA
31B G.CHA
31C B.CHA
TO
BM BOARD
BM-3
17B Ⓡ OUT
18C Ⓖ OUT
19B Ⓑ OUT
RED
TP101
GREEN
TP102
BLUE
TP103
12V
5V
-5V
+12V
<R.CHA>
<GAIN>
<NOR/TEST>
D653
1S2837
D634
1S2837
Q541
DTC144EK
Q542
DTC144EK
Q543
DTC144EK
Q544
DTC144EK
Q547
2SA1162
L605
100μH
L651
100μH
①
②
③
④
⑤
⑥
⑦

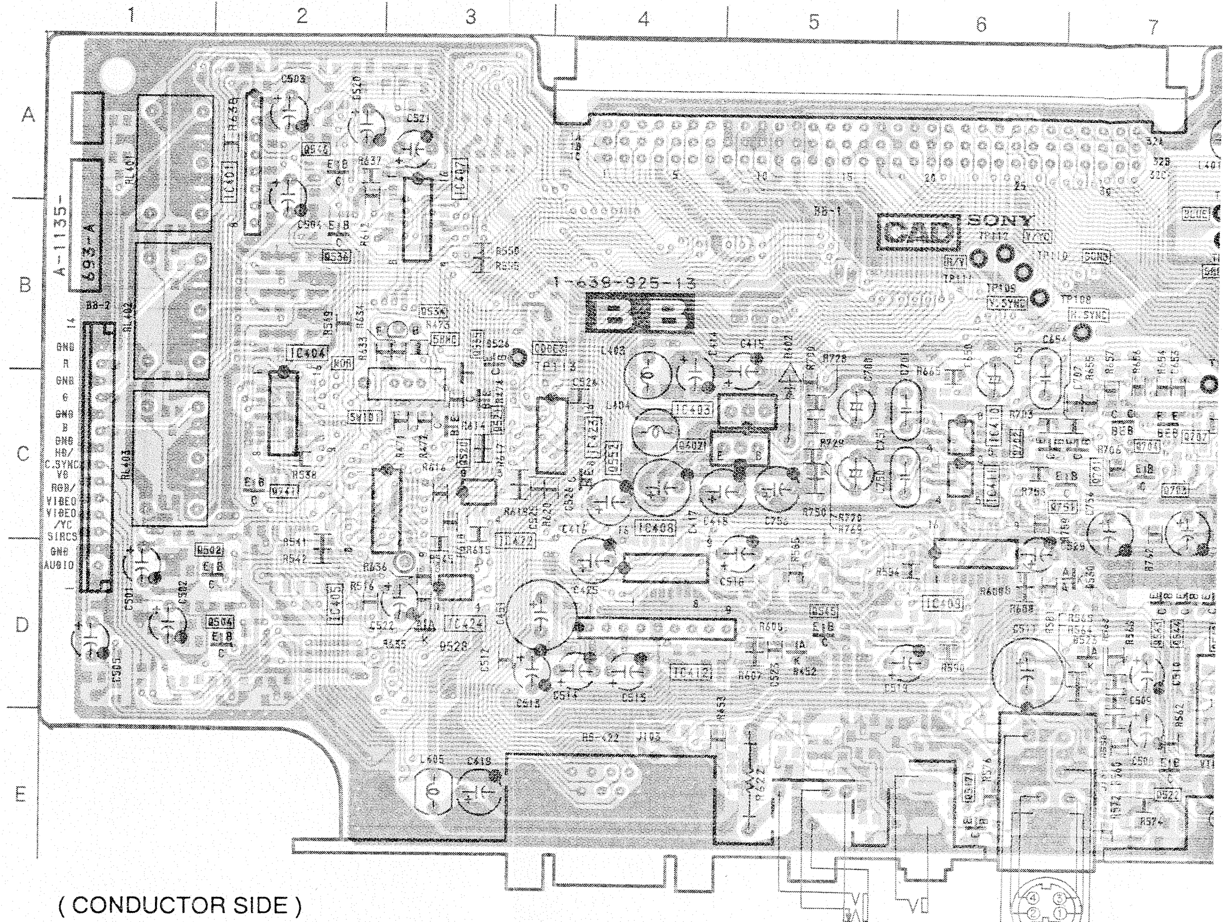
BB [SIGNAL SELECT, R.G.B PRE AMP]

– BB BOARD –

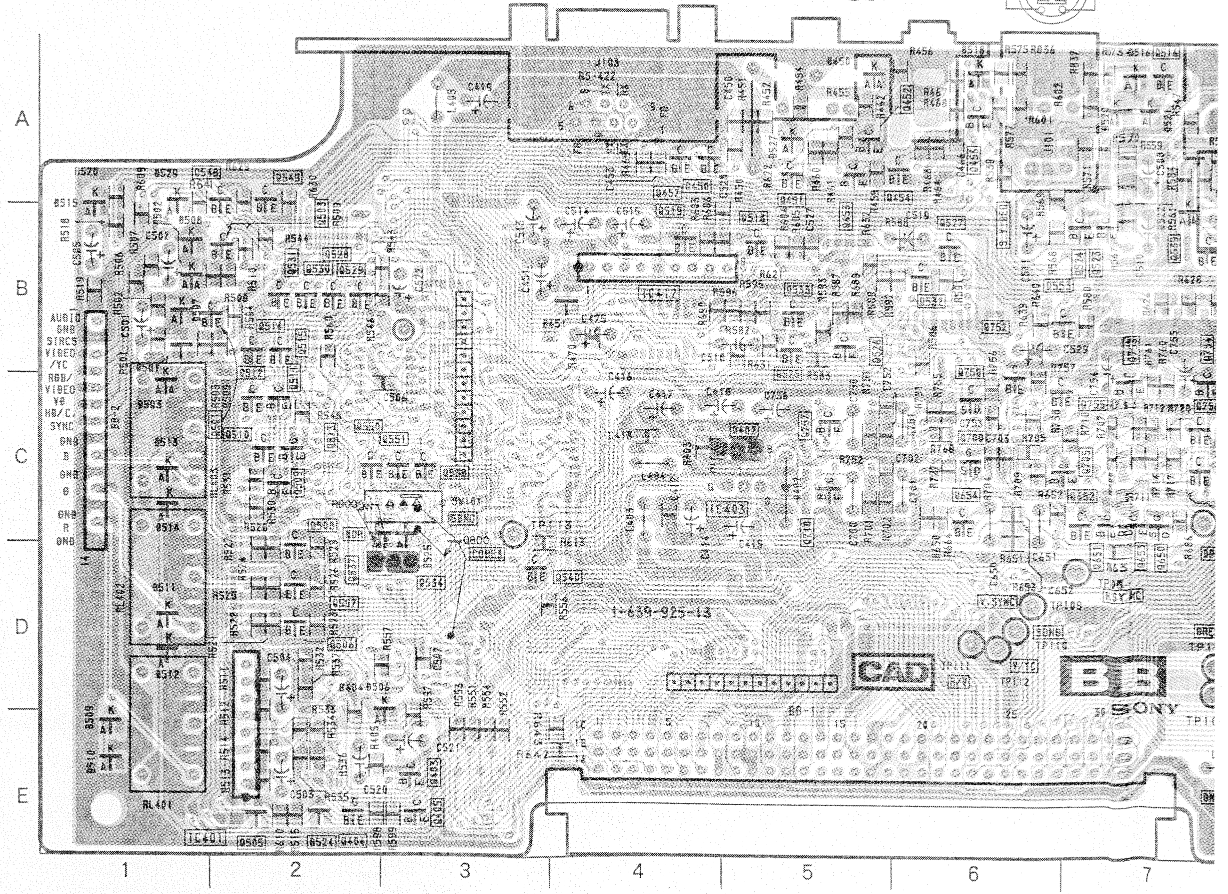
BB BOARD (COMPONENT SIDE)

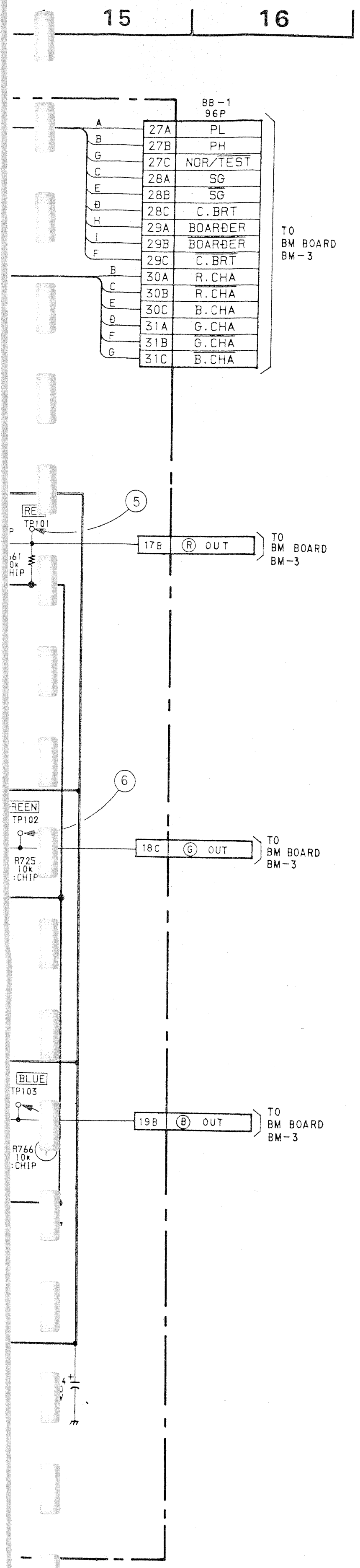
IC	
IC401	A-2
IC402	A-9
IC403	C-5
IC404	C-2
IC405	C-3
IC407	B-3
IC408	D-4
IC409	D-6
IC410	C-6
IC411	C-6
IC412	D-4
IC413	B-9
IC414	B-9
IC415	C-9
IC416	D-9
IC417	D-8
IC418	B-9
IC419	C-9
IC420	D-9
IC422	C-3
IC423	C-4
IC424	D-3
TRANSISTOR	
Q401	A-8
Q402	C-4
Q502	D-2
Q504	D-2
Q517	E-6
Q520	C-3
Q521	C-3
Q522	E-7
Q534	B-3
Q535	B-3
Q536	B-2
Q541	D-8
Q542	D-7
Q543	D-7
Q544	D-7
Q545	D-5
Q546	A-2
Q552	C-4
Q701	C-7
Q702	C-6
Q703	C-7
Q704	C-7
Q707	C-7
Q751	C-7
DIODE	
D401	A-10
D402	C-5
D452	D-5
D523	D-7
D526	B-3
D528	D-3
D530	D-7

(COMPONENT SIDE)


1
2
3
4
5
6
7
A
B
C
D
E
A-1135-
693-A
1-639-925-13
BB
CAD
SONY

(CONDUCTOR SIDE)


A
B
C
D
E
1
2
3
4
5
6
7
1-639-925-13
CAD
BB
SONY


15
16
BB-1
96P
27A PL
27B PH
27C NOR/TEST
28A SG
28B SG
28C C.BRT
29A BOARDER
29B BOARDER
29C C.BRT
30A R.CHA
30B R.CHA
30C B.CHA
31A G.CHA
31B G.CHA
31C B.CHA
TO BM BOARD BM-3
⑤
RED
TP101
17B Ⓡ OUT
TO BM BOARD BM-3
⑥
GREEN
TP102
R725 10k CHIP
18C Ⓖ OUT
TO BM BOARD BM-3
BLUE
TP103
R766 10k CHIP
19B Ⓑ OUT
TO BM BOARD BM-3

– BB BOARD –

BB [SIGNAL SELECT, R.G.B PRE AMP]

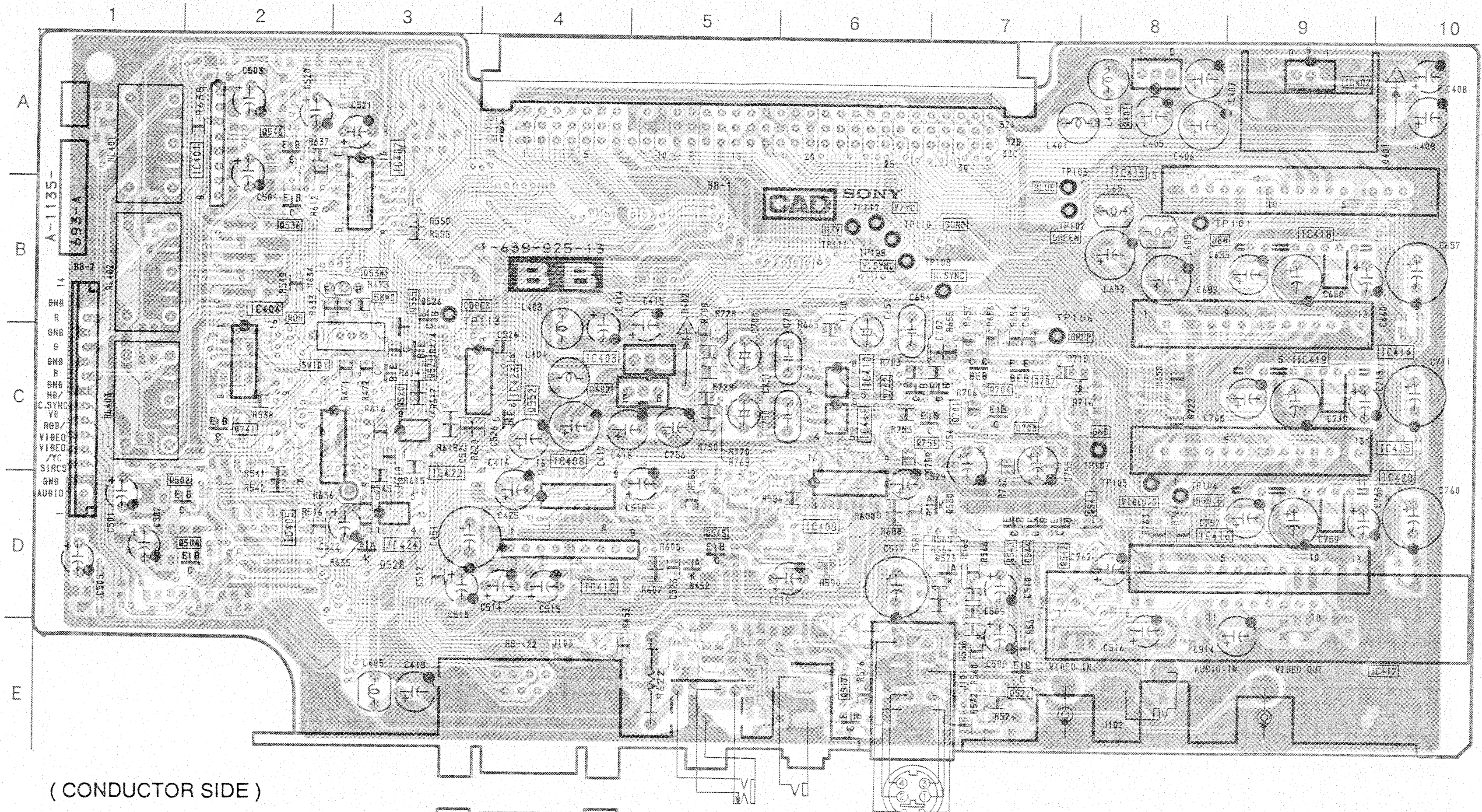
BB BOARD (COMPONENT SIDE)

IC	
IC401	A-2
IC402	A-9
IC403	C-5
IC404	C-2
IC405	C-3
IC407	B-3
IC408	D-4
IC409	D-6
IC410	C-6
IC411	C-6
IC412	D-4
IC413	B-9
IC414	B-9
IC415	C-9
IC416	D-9
IC417	D-8
IC418	B-9
IC419	C-9
IC420	D-9
IC422	C-3
IC423	C-4
IC424	D-3

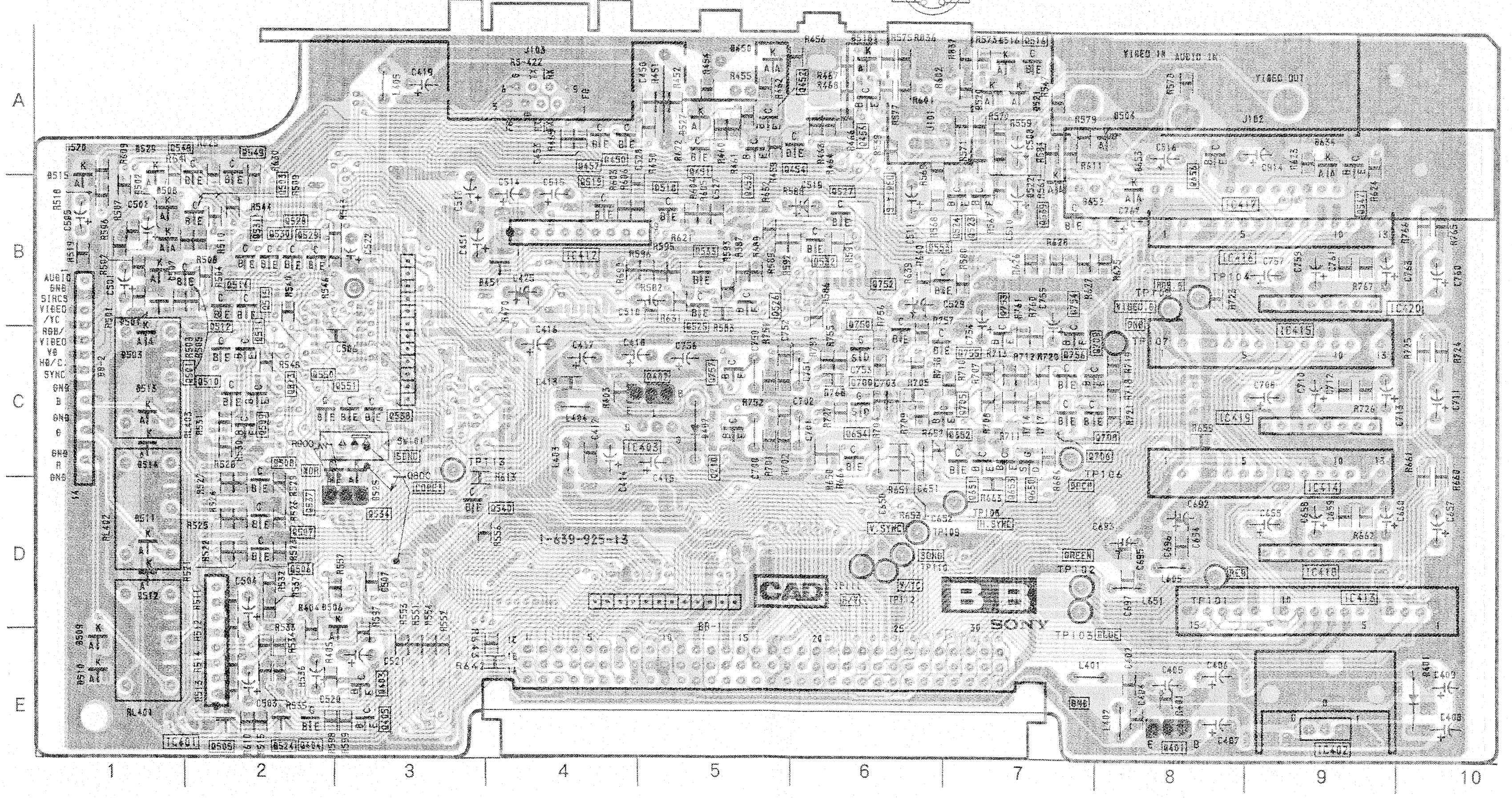
TRANSISTOR	
Q401	A-8
Q402	C-4
Q502	D-2
Q504	D-2
Q517	E-6
Q520	C-3
Q521	C-3
Q522	E-7
Q534	B-3
Q535	B-3
Q536	B-2
Q541	D-8
Q542	D-7
Q543	D-7
Q544	D-7
Q545	D-5
Q546	A-2
Q552	C-4
Q701	C-7
Q702	C-6
Q703	C-7
Q704	C-7
Q707	C-7
Q751	C-7

DIODE	
D401	A-10
D402	C-5
D452	D-5
D523	D-7
D526	B-3
D528	D-3
D530	D-7

(COMPONENT SIDE)


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
A-1135-693-A
1-639-925-13
BB
CAD
SONY
BB-1
J102
VIDEO IN
AUDIO IN
VIDEO OUT

(CONDUCTOR SIDE)


A
B
C
D
E
1
2
3
4
5
6
7
8
9
10
1-639-925-13
CAD
BB
SONY
J103
RS-422
J102
VIDEO IN
AUDIO IN
VIDEO OUT
GREEN
TP102
TP103
BLUE
TP101

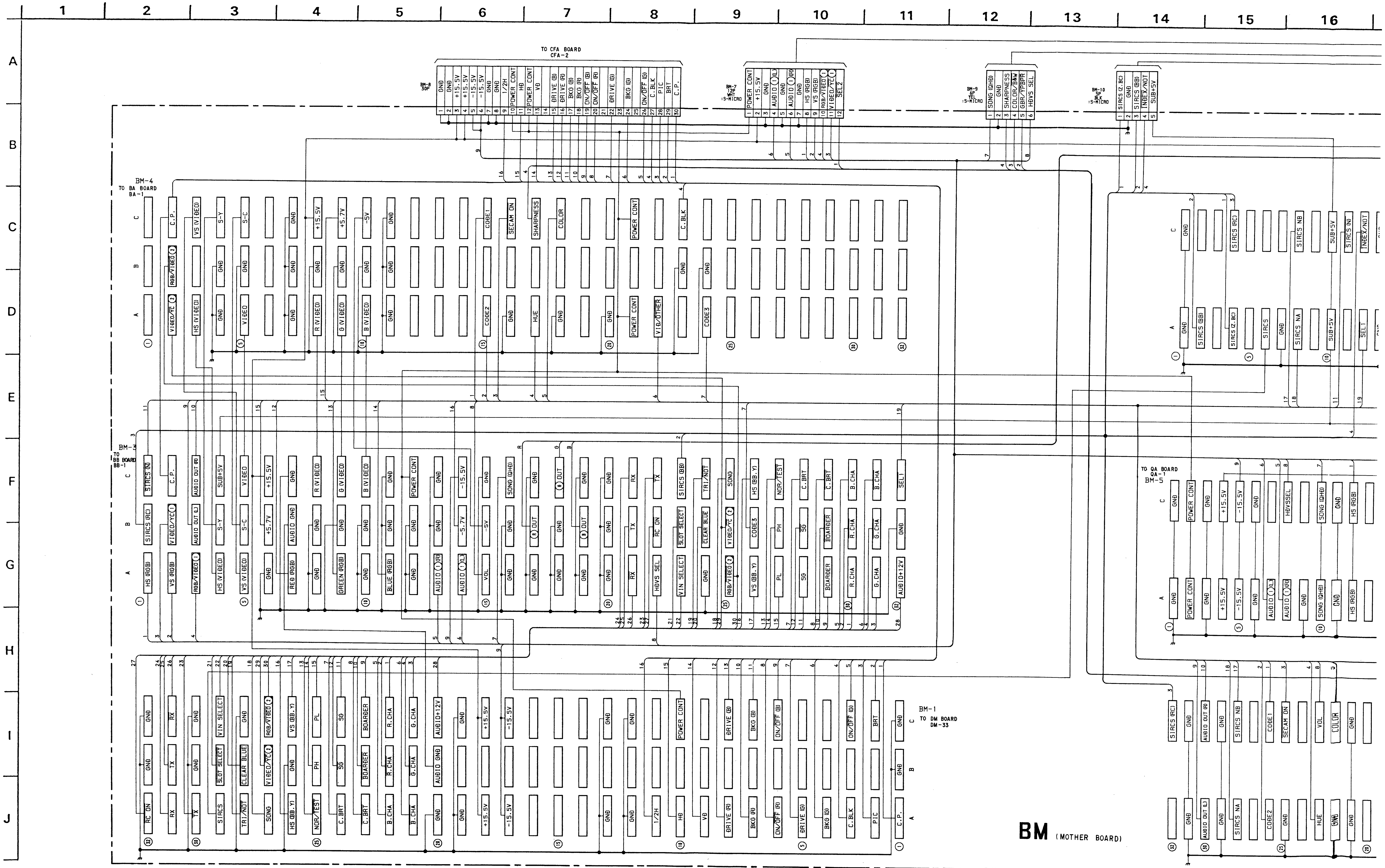
BB BOARD (CONDUCTOR SIDE)

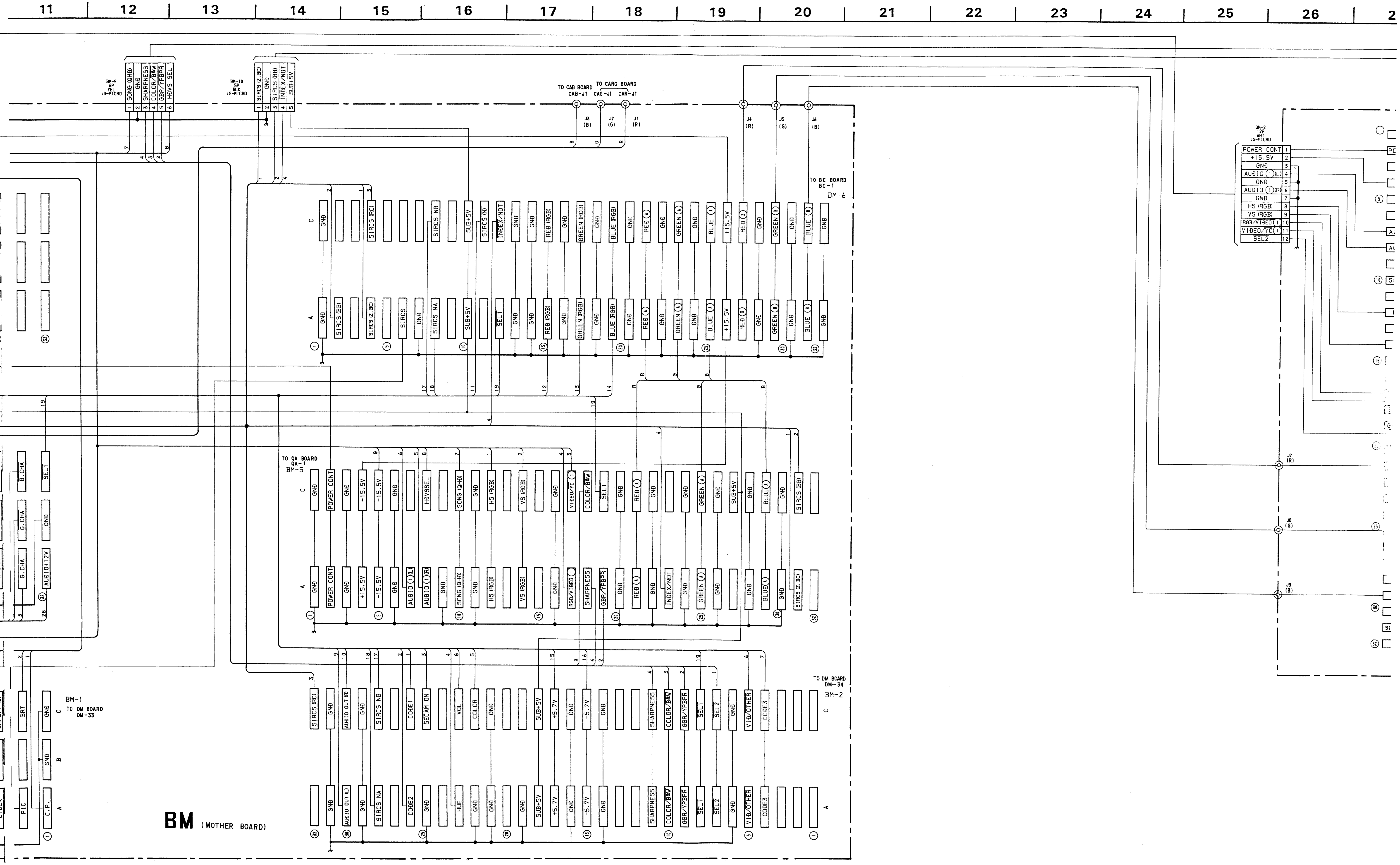
IC	
IC401	E-2
IC402	E-9
IC403	C-5
IC412	B-4
IC413	D-9
IC414	C-9
IC415	C-9
IC416	B-9
IC417	B-8
IC418	D-9
IC419	C-9
IC420	B-9

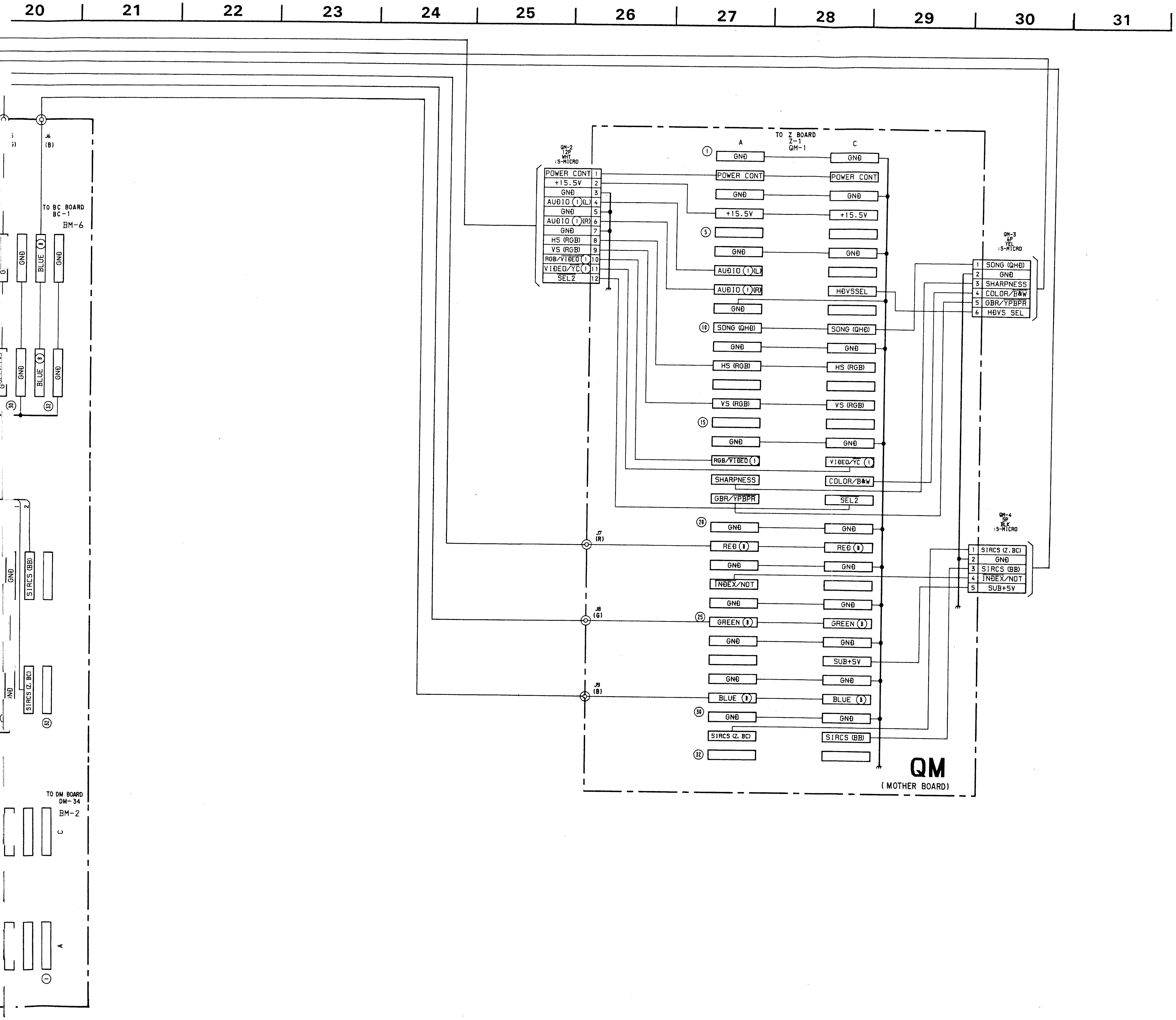
TRANSISTOR	
Q401	E-8
Q402	C-5
Q403	E-3
Q404	E-2
Q405	E-3
Q450	A-4
Q451	A-5
Q452	A-6
Q453	A-5
Q454	A-6
Q456	A-6
Q457	A-4
Q501	C-2
Q505	E-2
Q506	D-2
Q507	D-2
Q508	D-2
Q509	C-2
Q510	C-2
Q511	C-2
Q512	B-2
Q513	C-2
Q514	B-2
Q515	B-2
Q516	A-7
Q518	B-5
Q519	B-4
Q523	B-7
Q524	B-7
Q525	B-5
Q526	B-5
Q527	B-6
Q528	B-2
Q529	B-2
Q530	B-2
Q531	B-2
Q532	B-6
Q533	B-5
Q534	D-3
Q537	D-2
Q538	C-3
Q539	B-7
Q540	D-3
Q547	A-9
Q548	B-2
Q549	B-2
Q550	C-2
Q551	C-3
Q553	B-7
Q650	C-7
Q651	C-7
Q652	C-7
Q653	C-7
Q654	C-6
Q656	A-8
Q700	C-6
Q705	C-7
Q706	C-7
Q708	C-7
Q709	C-7
Q710	C-5
Q750	C-6
Q752	B-6
Q753	C-7
Q754	C-7
Q755	C-7
Q756	C-7
Q757	C-5

DIODE	
D401	E-10
D402	C-5
D450	A-5
D451	B-4
D501	C-1
D502	B-1
D503	C-1
D504	A-8
D506	D-2
D507	B-1
D508	B-1
D509	E-1
D510	E-1
D511	D-1
D512	D-1
D513	C-1
D514	C-1
D515	B-1
D516	A-7
D518	A-6
D520	A-7
D521	A-7
D522	B-7
D524	E-2
D525	D-3
D527	A-5
D529	A-1
D634	A-9
D652	B-7
D653	A-8

- ▒ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

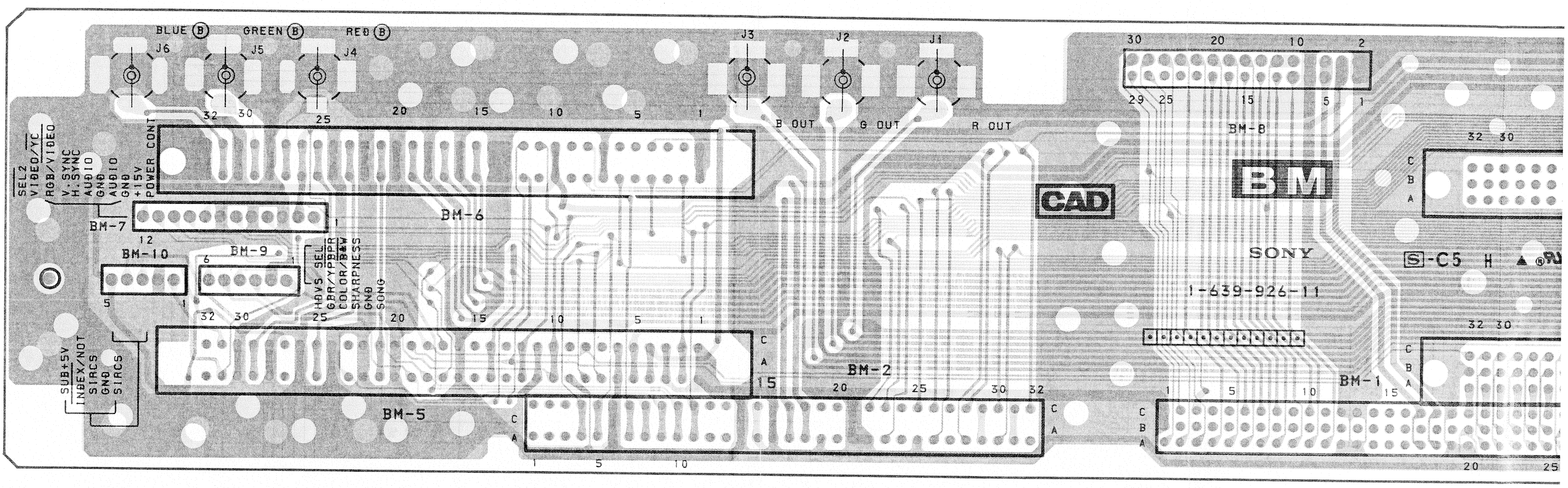

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
TO CFA BOARD
CFA-2
BM-8
30P
GND
+15.5V
-15.5V
1/2H
POWER CONT
HD
VD
DRIVE (B)
BKG (B)
ON/OFF (B)
DRIVE (G)
BKG (G)
ON/OFF (G)
C.BLK
PIC
BRT
C.P.
BM-7
12P
WHT
:S-MICRO
AUDIO (L)
AUDIO (R)
HS (RGB)
VS (RGB)
RGB/VIDEO
VIDEO/YC
SEL2
BM-9
6P
YEL
:S-MICRO
SONG (QHD)
SHARPNESS
COLOR/B&W
GBR/YPBPR
HDVS SEL
BM-10
4P
BLK
:S-MICRO
SIRCS (Z.BC)
SIRCS (BB)
INDEX/NOT
SUB+5V
BM-4
TO BA BOARD
BA-1
BM-3
TO
BB BOARD
BB-1
TO QA BOARD
QA-1
BM-5
BM-1
TO DM BOARD
DM-33
BM (MOTHER BOARD)

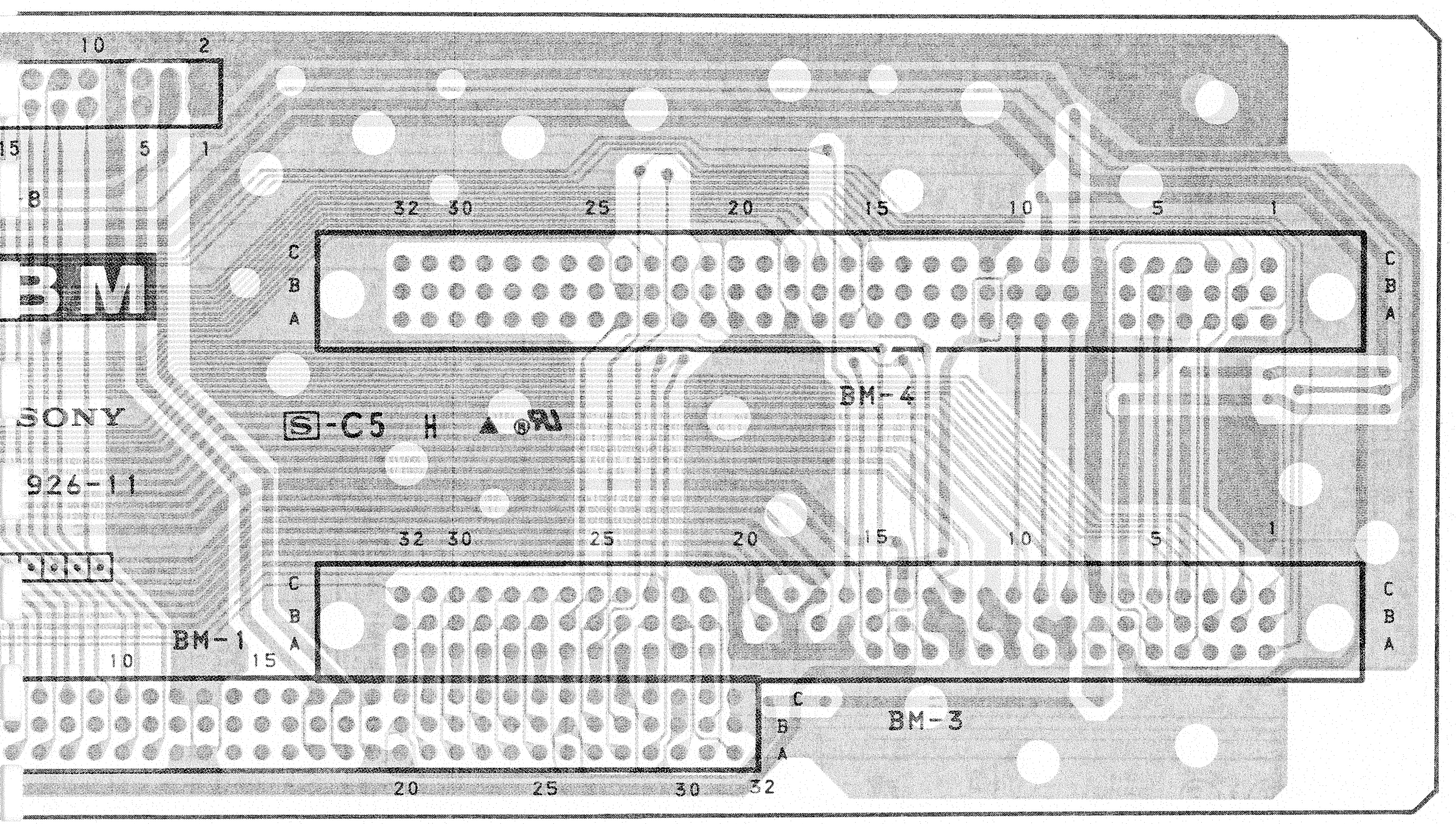

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
BM-9 6P YEL :S-MICRO
SONG (QHD)
GND
SHARPNESS
COLOR/B&W
GBR/YPBPR
HDVS SEL
BM-10 5P BLK :S-MICRO
SIRCS (Z.BC)
GND
SIRCS (BB)
INDEX/NOT
SUB+5V
TO CAB BOARD CAB-J1
TO CARG BOARD CAG-J1 CAR-J1
J1 (R)
J2 (G)
J3 (B)
J4 (R)
J5 (G)
J6 (B)
TO BC BOARD BC-1
BM-6
QM-2 12P WHT :S-MICRO
POWER CONT
+15.5V
GND
AUDIO (1)(L)
GND
AUDIO (1)(R)
GND
HS (RGB)
VS (RGB)
RGB/VIDEO (1)
VIDEO/YC (1)
SEL2
TO QA BOARD QA-1
BM-5
J7 (R)
J8 (G)
J9 (B)
TO DM BOARD DM-34
BM-2
BM-1
TO DM BOARD DM-33
BM (MOTHER BOARD)


20
21
22
23
24
25
26
27
28
29
30
31
J6
(B)
TO BC BOARD
BC-1
BM-6
GND
BLUE (B)
GND
GND
BLUE (B)
GND
㉚
㉜
GND
SIRCS (BB)
SIRCS (Z. BC)
㉜
TO DM BOARD
DM-34
BM-2
C
A
①
QM-2
12P
WHT
:S-MICRO
POWER CONT 1
+15.5V 2
GND 3
AUDIO ① (L) 4
GND 5
AUDIO ① (R) 6
GND 7
HS (RGB) 8
VS (RGB) 9
RGB/VIDEO ① 10
VIDEO/YC ① 11
SEL2 12
TO Z BOARD
Z-1
QM-1
A
C
①
GND
GND
POWER CONT
POWER CONT
GND
GND
+15.5V
+15.5V
⑤
GND
GND
AUDIO ① (L)
AUDIO ① (R)
HDVSSEL
GND
⑩
SONG (QHD)
SONG (QHD)
GND
GND
HS (RGB)
HS (RGB)
VS (RGB)
VS (RGB)
⑮
GND
GND
RGB/VIDEO ①
VIDEO/YC ①
SHARPNESS
COLOR/B&W
GBR/YPBPR
SEL2
⑳
GND
GND
J7
(R)
RED (B)
RED (B)
GND
GND
INDEX/NOT
GND
GND
J8
(G)
㉕
GREEN (B)
GREEN (B)
GND
GND
SUB+5V
GND
GND
J9
(B)
BLUE (B)
BLUE (B)
㉚
GND
GND
SIRCS (Z. BC)
SIRCS (BB)
㉜
QM-3
6P
YEL
:S-MICRO
1 SONG (QHD)
2 GND
3 SHARPNESS
4 COLOR/B&W
5 GBR/YPBPR
6 HDVS SEL
QM-4
5P
BLK
:S-MICRO
1 SIRCS (Z. BC)
2 GND
3 SIRCS (BB)
4 INDEX/NOT
5 SUB+5V
QM
(MOTHER BOARD)

BM [MOTHER BOARD]

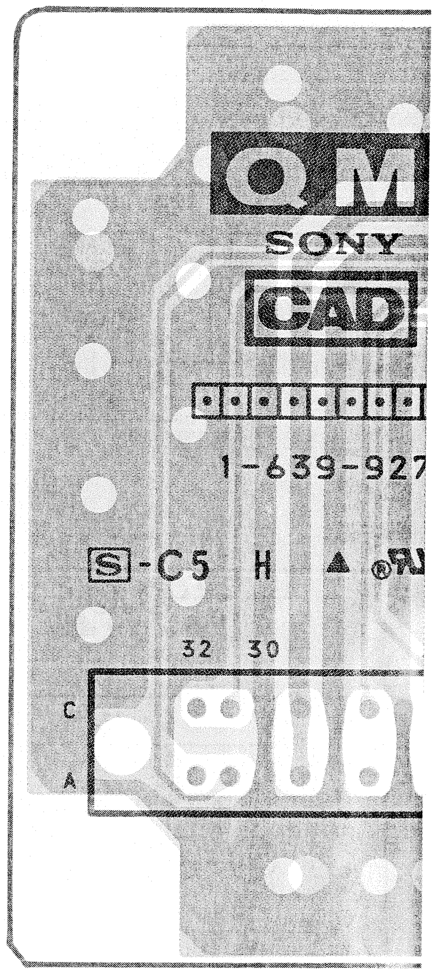
– BM BOARD –

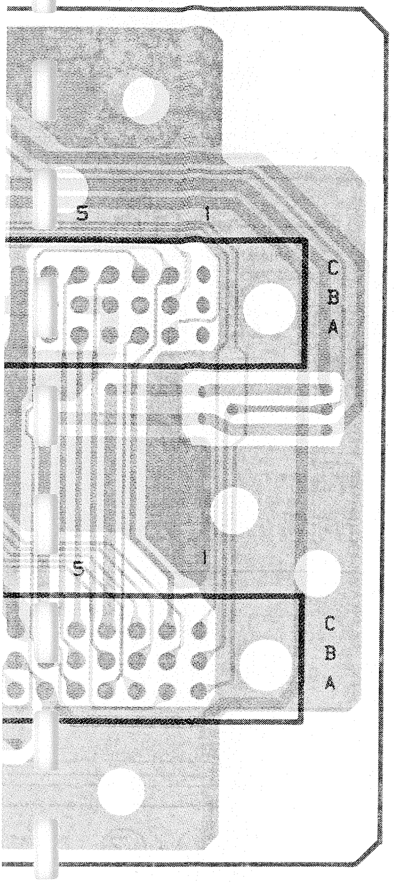

BLUE Ⓑ
GREEN Ⓑ
RED Ⓑ
J6
J5
J4
J3
J2
J1
B OUT
G OUT
R OUT
SEL2
VIDEO/YC
RGB/VIDEO
V.SYNC
H.SYNC
AUDIO
GND
AUDIO
GND
+15V
POWER CONT
BM-7
BM-10
BM-9
BM-6
BM-5
BM-2
BM-8
BM-1
HDVS SEL
GBR/YPBPR
COLOR/B&W
SHARPNESS
GND
SONG
SUB+5V
INDEX/NOT
SIRCS
GND
SIRCS
CAD
BM
SONY
1-639-926-11
Ⓢ-C5 H


BM
SONY
926-11
S-C5 H
BM-1
BM-3
BM-4
32
30
25
20
15
10
5
1
C
B
A

QM [MOTHER BOARD]

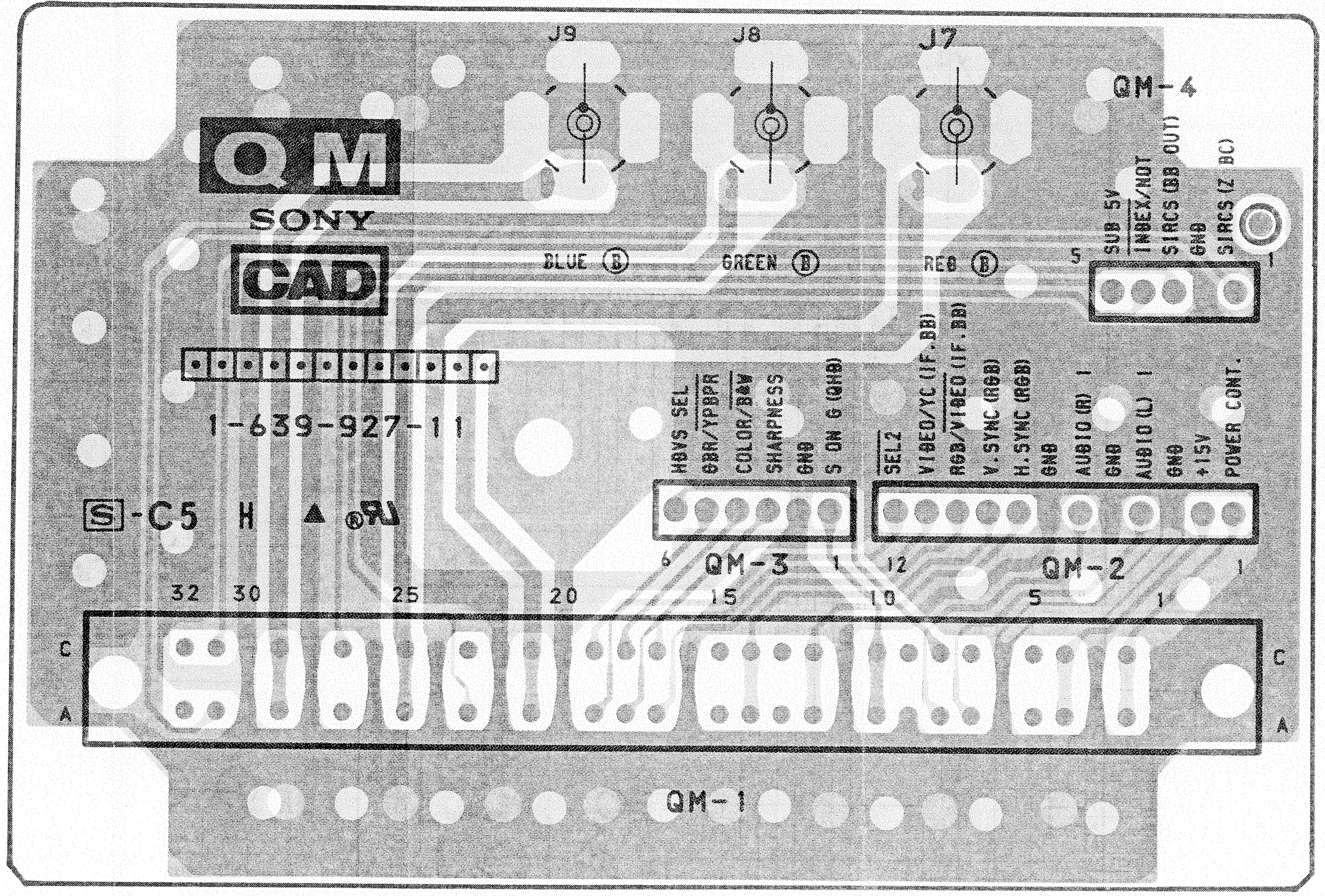
– QM BOARD –


QM
SONY
CAD
1-639-927
S-C5 H
32
30
C
A

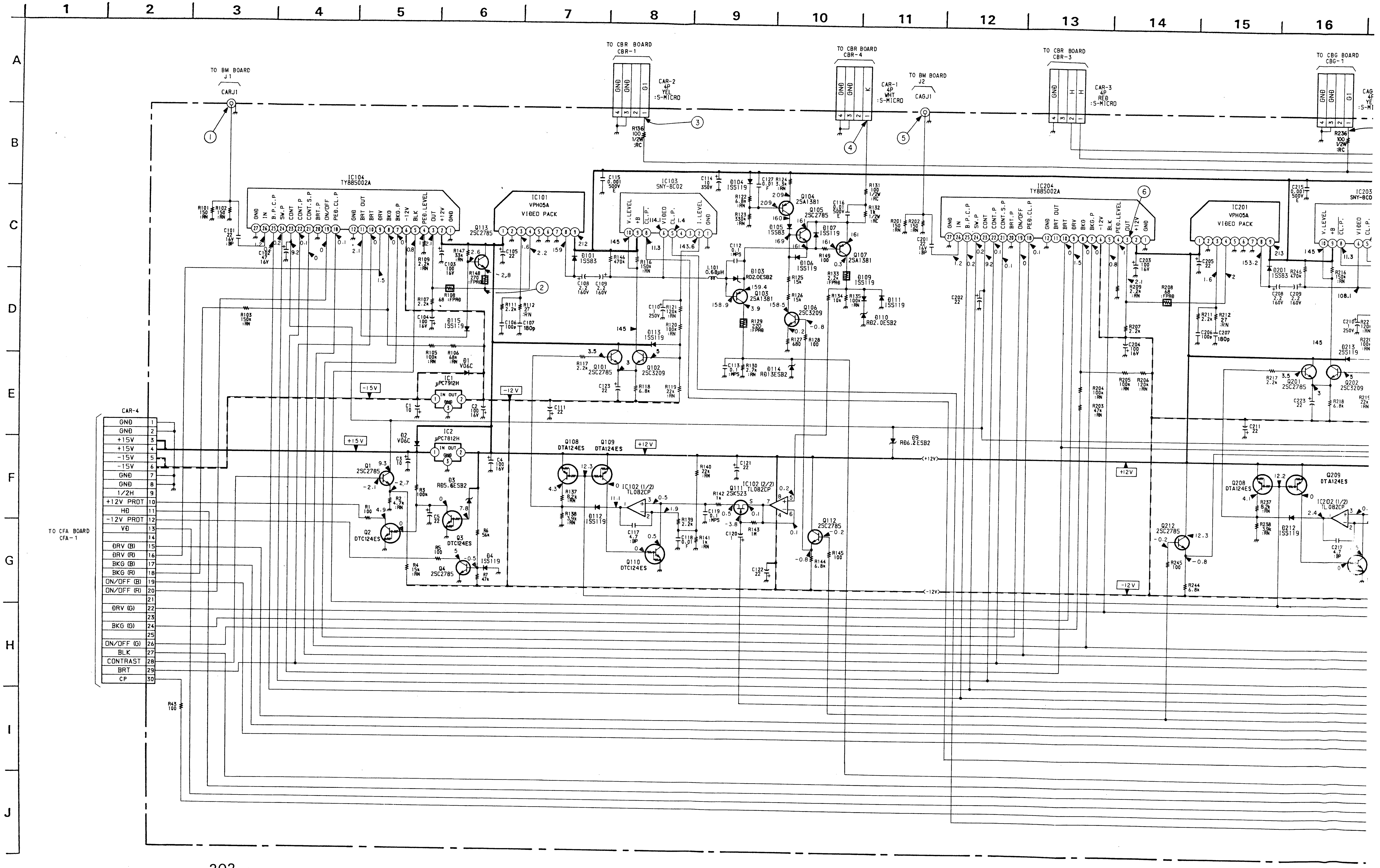

5
1
C
B
A
5
1
C
B
A

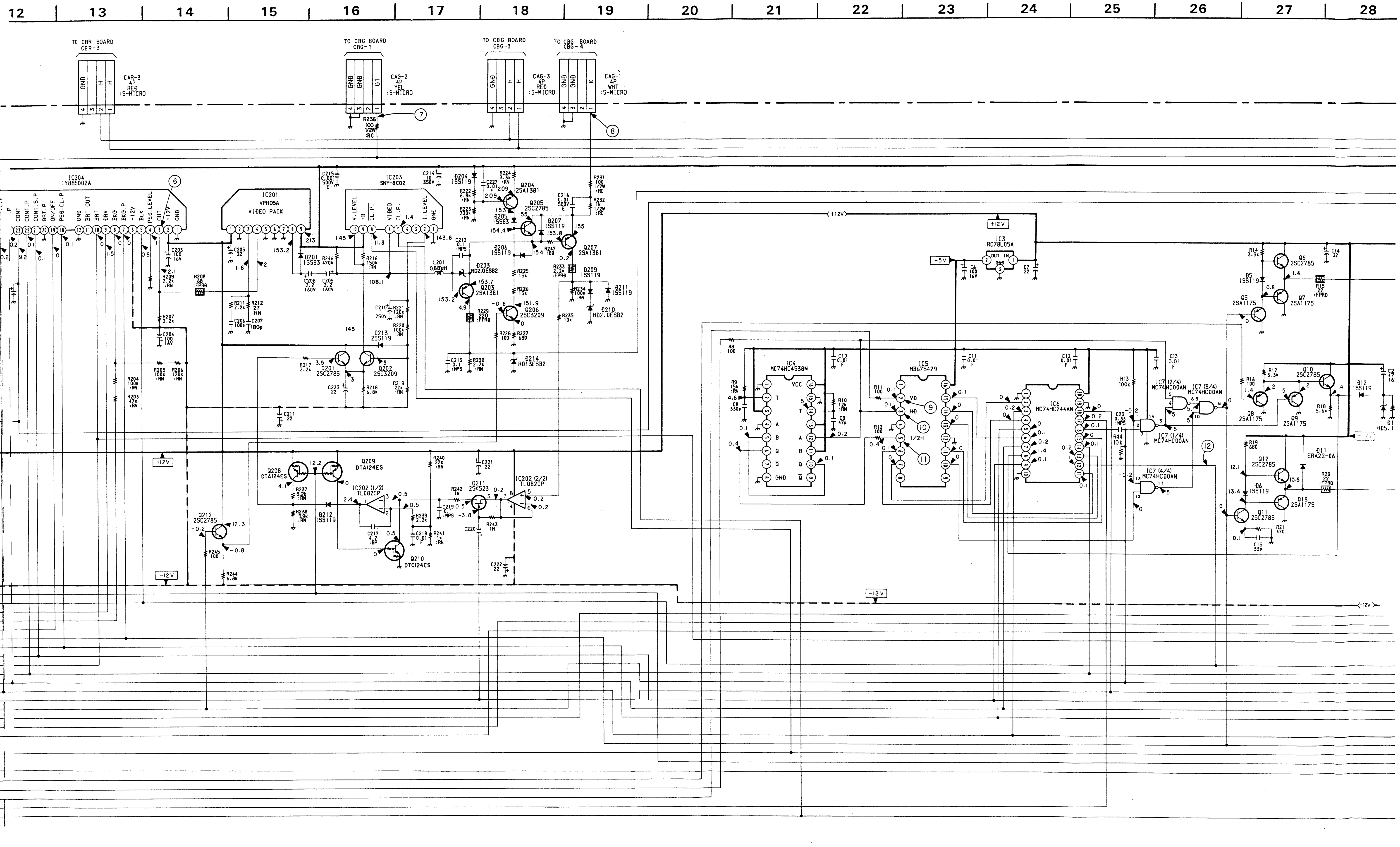
QM [MOTHER BOARD]

– QM BOARD –

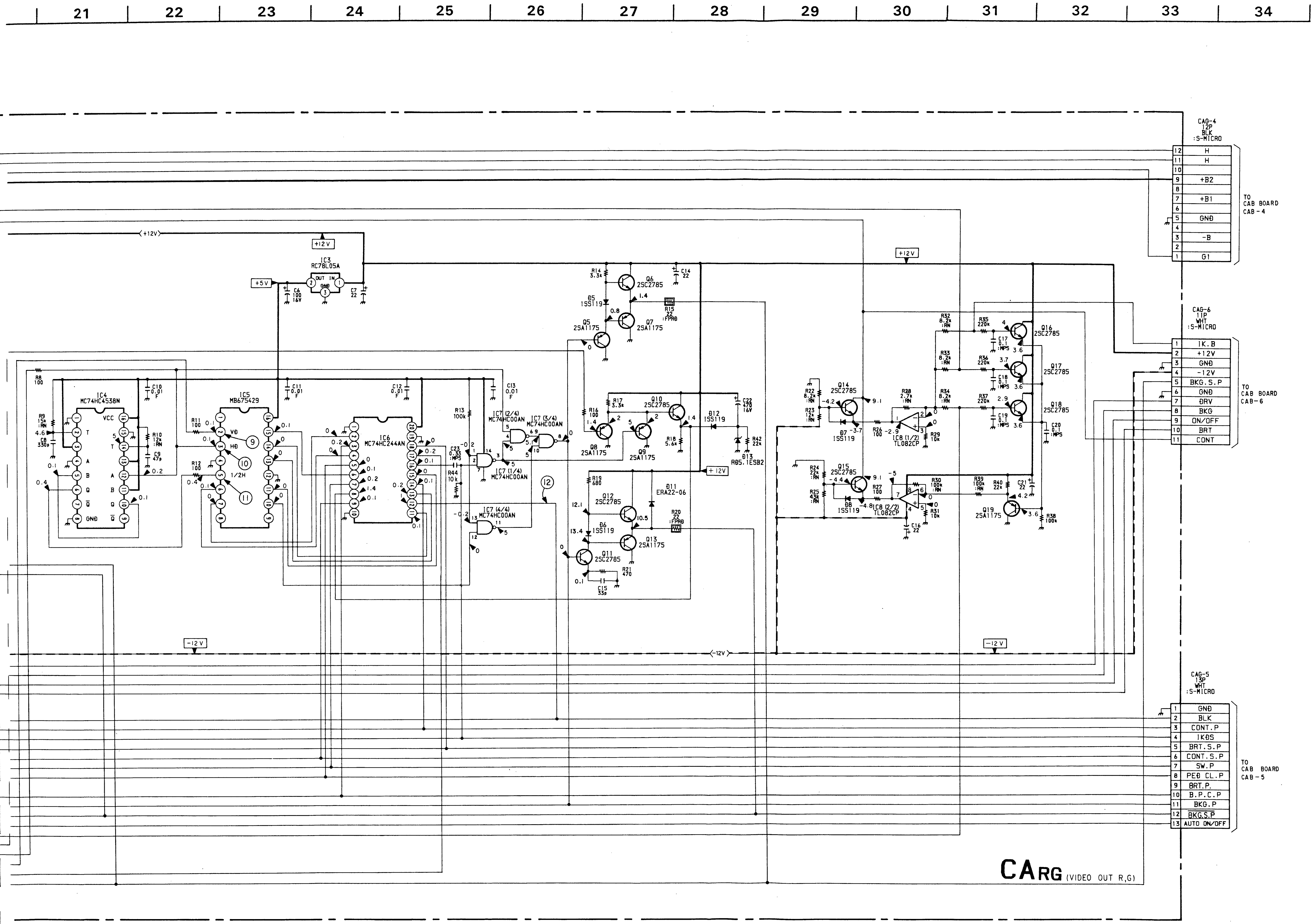

J9
J8
J7
QM-4
QM
SONY
CAD
BLUE Ⓑ
GREEN Ⓑ
RED Ⓑ
5
SUB 5V
INDEX/NOT
SIRCS (BB OUT)
GND
SIRCS (Z BC)
1
1-639-927-11
S-C5 H
HDVS SEL
GBR/YPBPR
COLOR/B&W
SHARPNESS
GND
S ON G (QHD)
SEL2
VIDEO/YC (IF. BB)
RGB/VIDEO (IF. BB)
V. SYNC (RGB)
H. SYNC (RGB)
GND
AUDIO (R) 1
GND
AUDIO (L) 1
GND
+15V
POWER CONT.
6
QM-3
1
12
QM-2
1
32
30
25
20
15
10
5
1
C
A
C
A
QM-1

- ░ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.


TO BM BOARD J1
CARJ1
TO CBR BOARD CBR-1
CAR-2 4P YEL :S-MICRO
TO CBR BOARD CBR-4
CAR-1 4P WHT :S-MICRO
TO BM BOARD J2
CAGJ1
TO CBR BOARD CBR-3
CAR-3 4P RED :S-MICRO
TO CBG BOARD CBG-1
IC104 TY885002A
IC101 VPH05A VIDEO PACK
IC103 SNY-8C02
IC204 TY885002A
IC201 VPH05A VIDEO PACK
IC1 µPC7912H
IC2 µPC7812H
IC102 (1/2) TL082CP
IC102 (2/2) TL082CP
IC202 (1/2) TL082CP
Q113 2SC2785
Q101 2SC2785
Q102 2SC3209
Q104 2SA1381
Q105 2SC2785
Q103 2SA1381
Q106 2SC3209
Q107 2SA1381
Q108 DTA124ES
Q109 DTA124ES
Q110 DTC124ES
Q111 2SK523
Q112 2SC2785
Q1 2SC2785
Q2 DTC124ES
Q3 DTC124ES
Q4 2SC2785
Q201 2SC2785
Q202 2SC3209
Q208 DTA124ES
Q209 DTA124ES
Q212 2SC2785
CAR-4
TO CFA BOARD CFA-1
GND
GND
+15V
+15V
-15V
-15V
GND
GND
1/2H
+12V PROT
HD
-12V PROT
VD
DRV (B)
DRV (R)
BKG (B)
BKG (R)
ON/OFF (B)
ON/OFF (R)
DRV (G)
BKG (G)
ON/OFF (G)
BLK
CONTRAST
BRT
CP
-15V
+15V
-12V
+12V
1
2
3
4
5
6

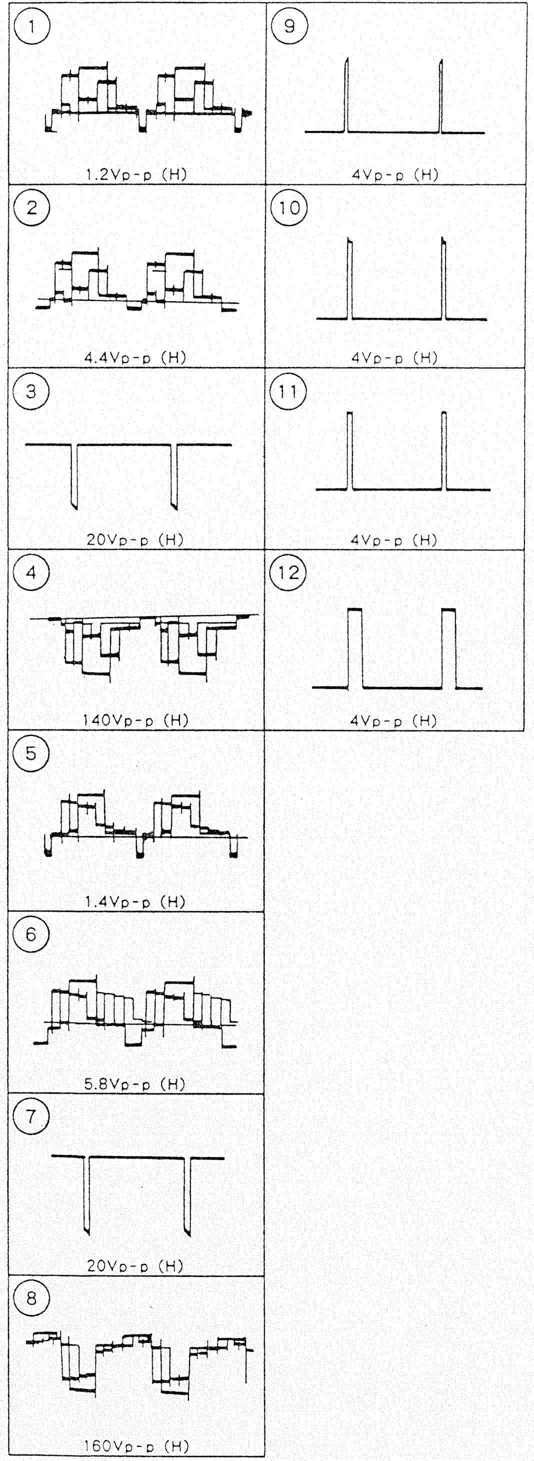


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
TO CBR BOARD CBR-3
CAR-3 4P RED :S-MICRO
TO CBG BOARD CBG-1
CAG-2 4P YEL :S-MICRO
TO CBG BOARD CBG-3
CAG-3 4P RED :S-MICRO
TO CBG BOARD CBG-4
CAG-1 4P WHT :S-MICRO
GND
H
G1
K
R236 100 1/2W :RC
⑦
⑧
⑥
IC204 TY885002A
CONT.P
CONT.S.P
BRT.P
DN/OFF
PED.CL.P
GND
BRT OUT
BRT
BRV
BKG
BKG.P
-12V
BLK
PED.LEVEL
OUT
+12V
IC201 VPH05A VIDEO PACK
IC203 SNY-8C02
V.LEVEL
+B
CL.P.
VIDEO
I.LEVEL
C215 0.001 500V E
C214 10 350V
D204 1SS119
R224 3.3k :RN
C227 0.01 F
R222 6.8k :RN
R223 330k :RN
Q204 2SA1381
D205 1SS83
Q205 2SC2785
D207 1SS119
Q207 2SA1381
R247 100
C216 0.01 500V E
R231 100 1/2W :RC
R232 1k 1/2W :RC
D206 1SS119
C212 0.1 :MPS
L201 0.68μH
D203 RD20ESB2
Q203 2SA1381
R225 15k
R226 15k
Q206 2SC3209
R229 220 :FPRB
R228 100
R227 680
R233 2.2k :FPRB
D209 1SS119
R234 100k :RN
D211 1SS119
R235 10k
D210 RD2.0ESB2
D214 RD13ESB2
C213 0.1 :MPS
R230 2.7k :RN
D201 1SS83
R246 470k
R216 150k :RN
C208 2.2 160V
C209 2.2 160V
C205 22
C203 100 16V
R209 2.2k :RN
R208 68 :FPRB
R211 2.2k
R212 27 :RN
C206 100p
C207 180p
R207 2.2k
C204 100 16V
C210 1 250V
R221 120k :RN
R220 100k :RN
D213 1SS119
R217 2.2k
Q201 2SC2785
Q202 2SC3209
C223 22
R218 6.8k
R219 22k :RN
R204 100k :RN
R203 47k :RN
R205 100k :RN
R206 120k :RN
C211 22
+12V
-12V
Q208 DTA124ES
Q209 DTA124ES
R237 8.2k :RN
R238 3.9k :RN
D212 1SS119
IC202 (1/2) TL082CP
C217 4.7 :BP
Q210 DTC124ES
R239 2.2k
C218 0.01 F
R241 1k :RN
R240 22k :RN
C221 22
R242 1k
Q211 2SK523
C219 0.1 :MPS
R243 1M
C220 1
C222 22
IC202 (2/2) TL082CP
Q212 2SC2785
R245 100
R244 6.8k
(+12V)
IC3 RC78L05A
OUT IN GND
+5V
C6 100 16V
C7 22
R8 100
R9 15k :RN
C8 330p
IC4 MC74HC4538N
VCC
T
A
B
Q
GND
C10 0.01 F
R10 12k :RN
C9 47p
IC5 MB675429
VD
HD
1/2H
⑨
⑩
⑪
R11 100
R12 100
C11 0.01 F
C12 0.01 F
IC6 MC74HC244AN
C13 0.01 F
R13 100k
C23 0.33 :MPS
R44 10k
IC7 (2/4) MC74HC00AN
IC7 (3/4) MC74HC00AN
IC7 (1/4) MC74HC00AN
IC7 (4/4) MC74HC00AN
⑫
R14 3.3k
Q6 2SC2785
C14 22
D5 1SS119
R15 22 :FPRB
Q5 2SA1175
Q7 2SA1175
R16 100
R17 3.3k
Q10 2SC2785
Q8 2SA1175
Q9 2SA1175
R18 5.6k
D12 1SS119
R19 680
Q12 2SC2785
D11 ERA22-06
R20 22 :FPRB
D6 1SS119
Q13 2SA1175
Q11 2SC2785
R21 470
C15 33p
(-12V)


21
22
23
24
25
26
27
28
29
30
31
32
33
34
CAG-4
12P
BLK
:S-MICRO
12 H
11 H
10
9 +B2
8
7 +B1
6
5 GND
4
3 -B
2
1 G1
TO CAB BOARD CAB-4
CAG-6
11P
WHT
:S-MICRO
1 IK.B
2 +12V
3 GND
4 -12V
5 BKG.S.P
6 GND
7 DRV
8 BKG
9 ON/OFF
10 BRT
11 CONT
TO CAB BOARD CAB-6
CAG-5
13P
WHT
:S-MICRO
1 GND
2 BLK
3 CONT.P
4 IKDS
5 BRT.S.P
6 CONT.S.P
7 SW.P
8 PED CL.P
9 BRT.P.
10 B.P.C.P
11 BKG.P
12 BKG.S.P
13 AUTO ON/OFF
TO CAB BOARD CAB-5
+12V
-12V
+5V
IC3 RC78L05A
IC4 MC74HC4538N
IC5 MB675429
IC6 MC74HC244AN
IC7 (1/4) MC74HC00AN
IC7 (2/4) MC74HC00AN
IC7 (3/4) MC74HC00AN
IC7 (4/4) MC74HC00AN
IC8 (1/2) TL082CP
IC8 (2/2) TL082CP
Q5 2SA1175
Q6 2SC2785
Q7 2SA1175
Q8 2SA1175
Q9 2SA1175
Q10 2SC2785
Q11 2SC2785
Q12 2SC2785
Q13 2SA1175
Q14 2SC2785
Q15 2SC2785
Q16 2SC2785
Q17 2SC2785
Q18 2SC2785
Q19 2SA1175
D5 1SS119
D6 1SS119
D7 1SS119
D8 1SS119
D11 ERA22-06
D12 1SS119
D13 RD5.1ESB2
VD
HD
1/2H
⑨
⑩
⑪
⑫

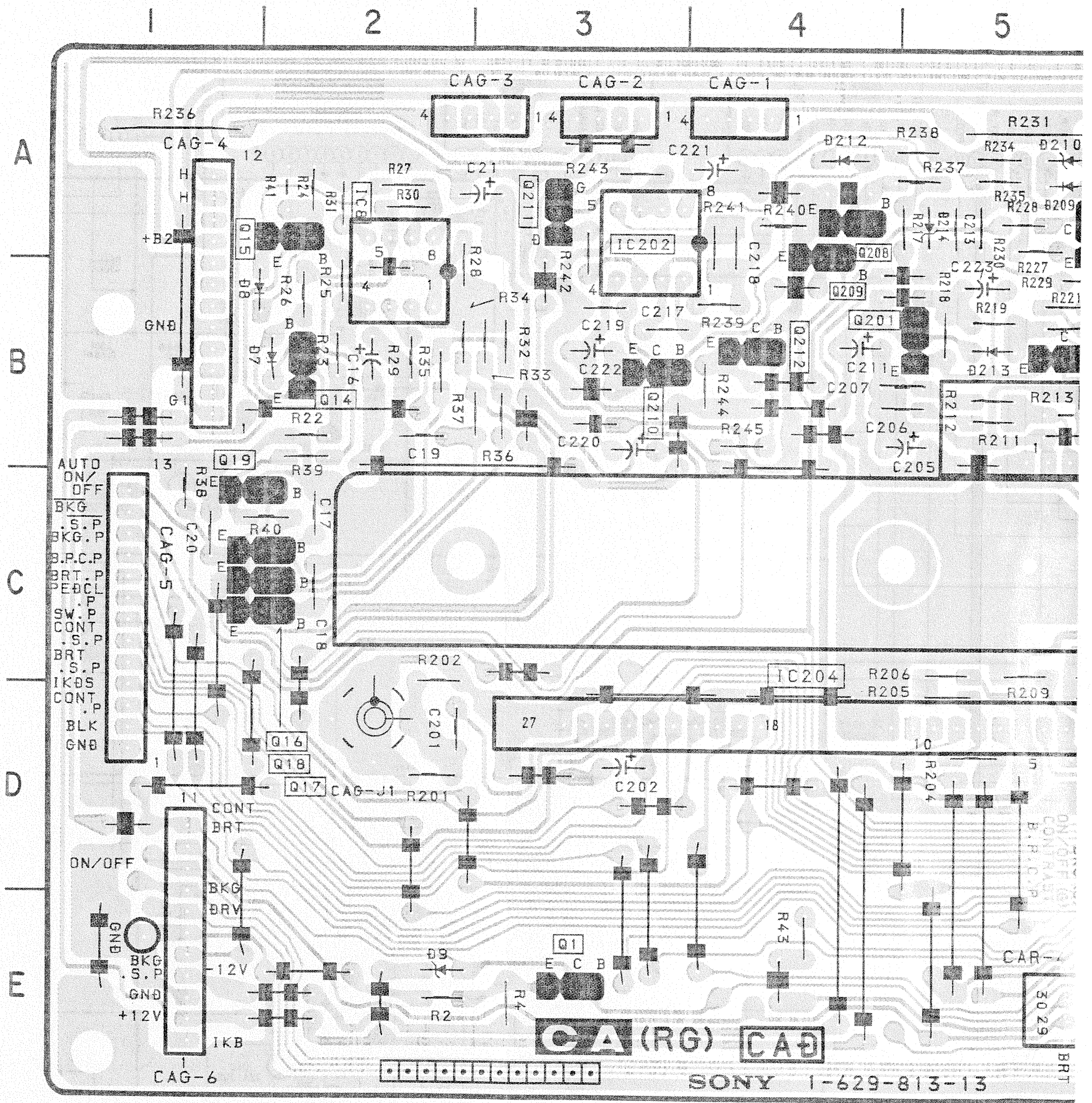
CArg (VIDEO OUT R,G)

CA(RG) BOARD

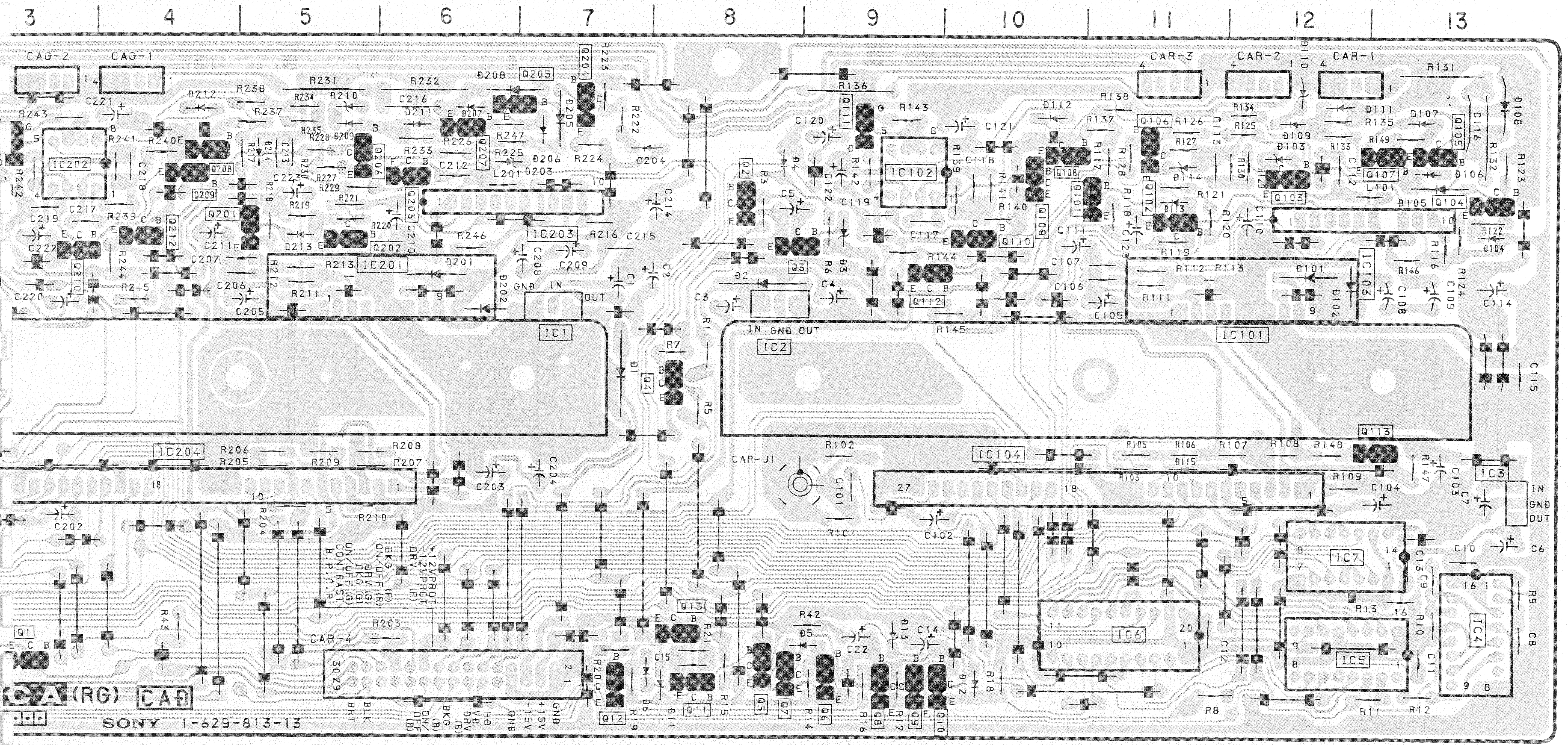


CA (RG)	IC1	μPC7912H	–12V REG	202	2SC3209	G BLAMP
	2	μPC7812H	+12V REG	203	2SA1381	G IK DET-1
	3	RC78L05A	+5V REG	204	2SA1381	G CURRENT SOURCE
	4	MC74HC4538N	PULSES GEN	205	2SC2785	G IK DET-2
	5	MB675429	PULSES GEN	206	2SC3209	G IK DET-2
	6	MC74HC244AN	PULSES GEN	207	2SA1381	G IK DET-2
	7	MC74HC00AN	PULSES GEN	208	DTA124ES	G AUTO BKG SW
	8	TL082CP	PEAK & S. T. ABL	209	DTA124ES	G AUTO BKG SW
	101	VPH05A	R VIDEO OUT	210	DTC124EC	G AUTO BKG SW
	102	TL082CP	R AUTO BKG	211	2SK523	G AUTO BKG
	103	SNY-8C02	R CLAMP	212	2SC2785	G IK DET-2
	104	TY885002A	R SIGNAL PROCESS			
	201	VPH05A	G VIDEO OUT	D1	V06C	– 12V REG PROT
	202	TL082CP	G AUTO BKG	2	V06C	+12V REG PROT
	203	SNY-8C02	G CLAMP	3	RD5.6ESB2	+12V PROT
	204	TY885002A	G SIGNAL PROCESS	4	1SS119	– 12V PROT
				5	1SS119	BIAS
	Q1	2SC2785	CONTRAST CONTROL	6	1SS119	BIAS
	2	DTC124ES	+12V PROT	7	1SS119	PEAK ABL
	3	DTC124ES	+12V PROT	8	1SS119	S.T. ABL
	4	2SC2785	–12V PROT	9	RD6.2ESB2	CONT PROT
	5	2SA1175	BKG S.P. GEN	11	ERA22-06	PROT
	6	2SC2785	BKG S.P. GEN	12	1SS119	ON SPOT PROT
	7	2SA1175	BKG S.P. GEN	13	RD5.1ESB2	ON SPOT PROT
	8	2SA1175	BLK P. GEN	101	1SS83	R VIDEO OUT PROT
	9	2SA1175	BLK P. GEN	103	RD2.0ESB2	R IK DET-1 PROT
	10	2SC2785	BLK P. GEN	104	1SS119	R THERM COMP
	11	2SC2785	BKG S.P. GEN	105	1SS83	R IK DET-2 PROT
	12	2SC2785	BKG S.P. GEN	106	1SS119	R IK DET-2 PROT
	13	2SA1175	BKG S.P. GEN	107	1SS119	R IK DET-2 PROT
	14	2SC2785	PEAK ABL	109	1SS119	R IK DET-2 PROT
	15	2SC2785	S.T. ABL	110	RD2.0ESB2	R IK DET-2 PROT
	16	2SC2785	B.S.T. ABL	111	1SS119	R IK DET-2 PROT
	17	2SC2785	G.S.T. ABL	112	1SS119	R AUTO BKG SW
	18	2SC2785	R.S.T. ABL	113	1SS119	R OFF SPOT PROT
	19	2SA1175	S.T. ABL	114	RD13ESB2	R IK DET-1 PROT
	101	2SC2785	R CLAMP	115	1SS119	R γ CORR
	102	2SC3209	R CLAMP	201	1SS83	G VIDEO OUT PROT
	103	2SA1381	R IK DET-1	203	RD2.0ESB2	R IK DET-1 PROT
	104	2SA1381	R CURRENT SOURCE	204	1SS119	G THERM COMP
	105	2SC2785	R IK DET-2	205	1SS83	R IK DET-2 PROT
	106	2SC3209	R IK DET-2	206	1SS119	R IK DET-2 PROT
	107	2SA1381	R IK DET-2	207	1SS119	R IK DET-2 PROT
	108	DTA124ES	R AUTO BKG SW	209	1SS119	R IK DET-2 PROT
	109	DTA124ES	R AUTO BKG SW	210	RD2.0ESB2	R IK DET-2 PROT
	110	DTA124ES	R AUTO BKG SW	211	1SS119	R IK DET-2 PROT
	111	2SK523	R AUTO BKG	212	1SS119	G AUTO BKG SW
	112	2SC2785	R IK DET-2	213	1SS119	G OFF SPOT PROT
	113	2SC2785	R γ CORR	214	RD13ESB2	R IK DET-1 PROT
	201	2SC2785	G BLAMP			

– CA(RG) BOARD –


1
2
3
4
5
A
B
C
D
E
CAG-3
CAG-2
CAG-1
CAG-4
CAG-5
CAG-6
CAG-J1
R236
R238
R231
R237
IC8
IC202
IC204
Q211
Q208
Q209
Q201
Q212
Q210
Q15
Q14
Q19
Q16
Q18
Q17
Q1
C21
C221
C217
C219
C222
C220
C207
C206
C205
C19
C201
C202
R202
R206
R205
R209
R201
R204
R43
R2
R4
D3
D212
D210
D213
GND
AUTO ON/OFF
BKG .S.P
BKG.P
B.P.C.P
BRT.P
PEDCL
SW.P
CONT .S.P
BRT .S.P
IKDS
CONT .P
BLK
GND
ON/OFF
CONT
BRT
BKG DRV
-12V
+12V
IKB
CAR-
CA (RG)
CAD
SONY
1-629-813-13

CA(RG) [VIDEO OUT R.G]


3
4
5
6
7
8
9
10
11
12
13
CAG-2
CAG-1
CAR-3
CAR-2
CAR-1
CAR-4
CAR-J1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC101
IC102
IC103
IC104
IC201
IC202
IC203
IC204
IN GND OUT
CA (RG) CAD
SONY 1-629-813-13
BRT
BLK
ON/OFF (B)
BKG (B)
BRV (B)
HD
VD
GND
-15V
+15V
GND
ON/OFF (R)
BKG (R)
BRV (R)
+12V PROT
+12V PROT
BKG
ON/OFF (G)
BRV (G)
CONTRAST
B.P.C.P

CA(RG) E

IC

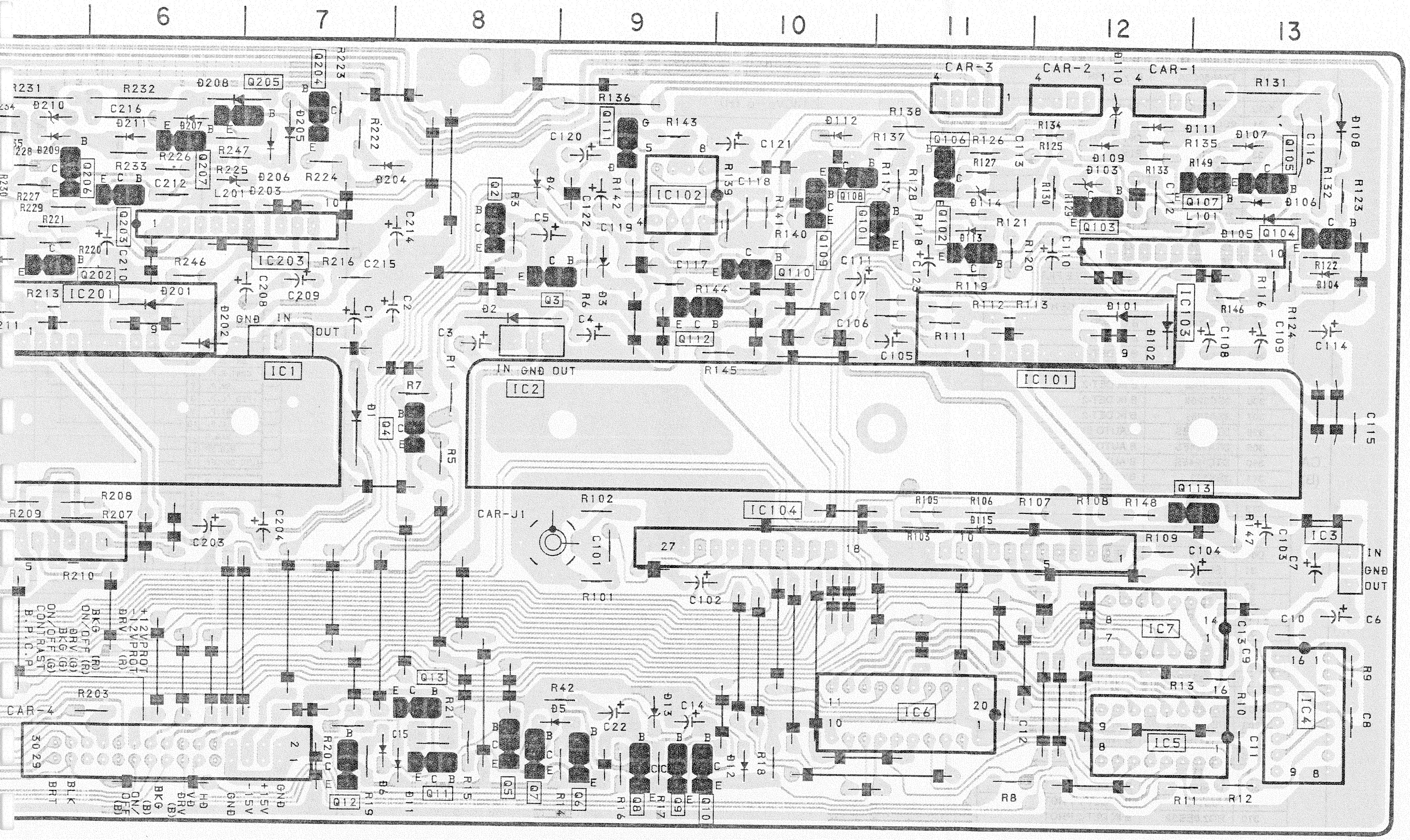
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC101
IC102
IC103
IC104
IC201
IC202
IC203
IC204

TRANS

Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
Q109
Q110
Q111
Q112

CA(RG)

[VIDEO OUT R.G]


6
7
8
9
10
11
12
13
CAR-1
CAR-2
CAR-3
CAR-4
CAR-J1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC101
IC102
IC103
IC104
IC201
IC203
IN
GND
OUT
+12VPROT
-12VPROT
BRV (R)
ON/OFF (R)
BKG (R)
BRV (G)
BKG (G)
ON/OFF (G)
CONTRAST
B.PIC.P
BLK
BRT
ON/OFF (B)
BKG (B)
BRV (B)
HD
VD
GND
-15V
+15V
GND

CA(RG) BOARD

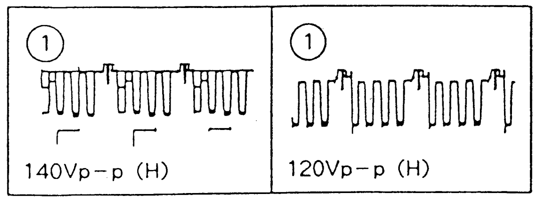
IC	
IC1	B-7
IC2	B-8
IC3	D-13
IC4	E-13
IC5	E-12
IC6	E-11
IC7	D-12
IC8	A-2
IC101	B-11
IC102	A-9
IC103	B-12
IC104	D-10
IC201	B-5
IC202	A-3
IC203	B-7
IC204	D-4

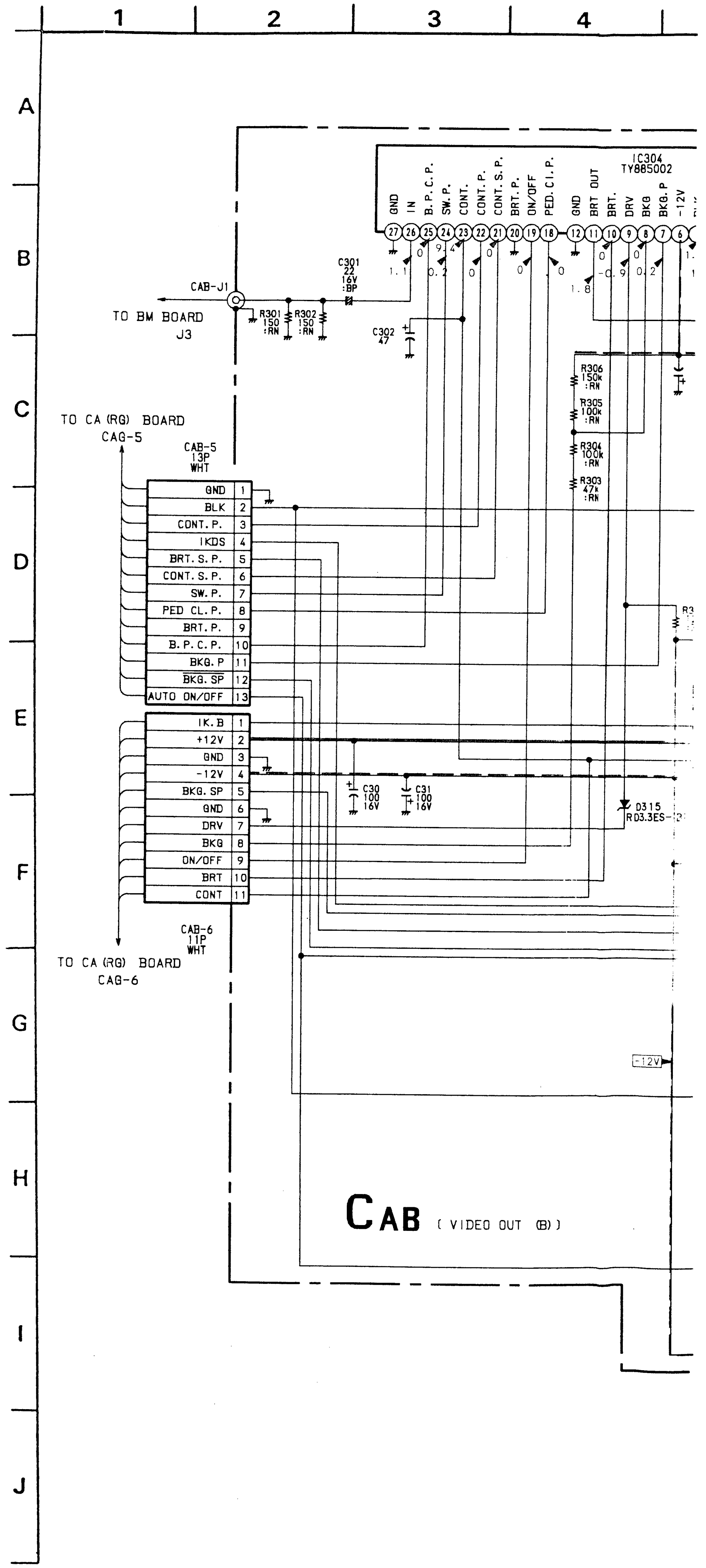
TRANSISTOR	
Q1	E-3
Q2	B-8
Q3	B-8
Q4	C-8
Q5	E-8
Q6	E-9
Q7	E-8
Q8	E-9
Q9	E-9
Q10	E-9
Q11	E-8
Q12	E-7
Q13	E-8
Q14	B-2
Q15	A-2
Q16	C-1
Q17	C-1
Q18	C-1
Q19	C-1
Q101	B-10
Q102	B-11
Q103	A-12
Q104	B-13
Q105	A-13
Q106	A-11
Q107	A-13
Q108	A-10
Q109	B-10
Q110	B-10
Q111	A-9
Q112	B-9
Q113	C-13
Q201	B-5
Q202	B-5
Q203	A-6
Q204	A-7
Q205	A-6
Q206	A-5
Q207	A-6
Q208	A-4
Q209	A-4
Q210	B-3
Q211	A-3
Q212	B-4

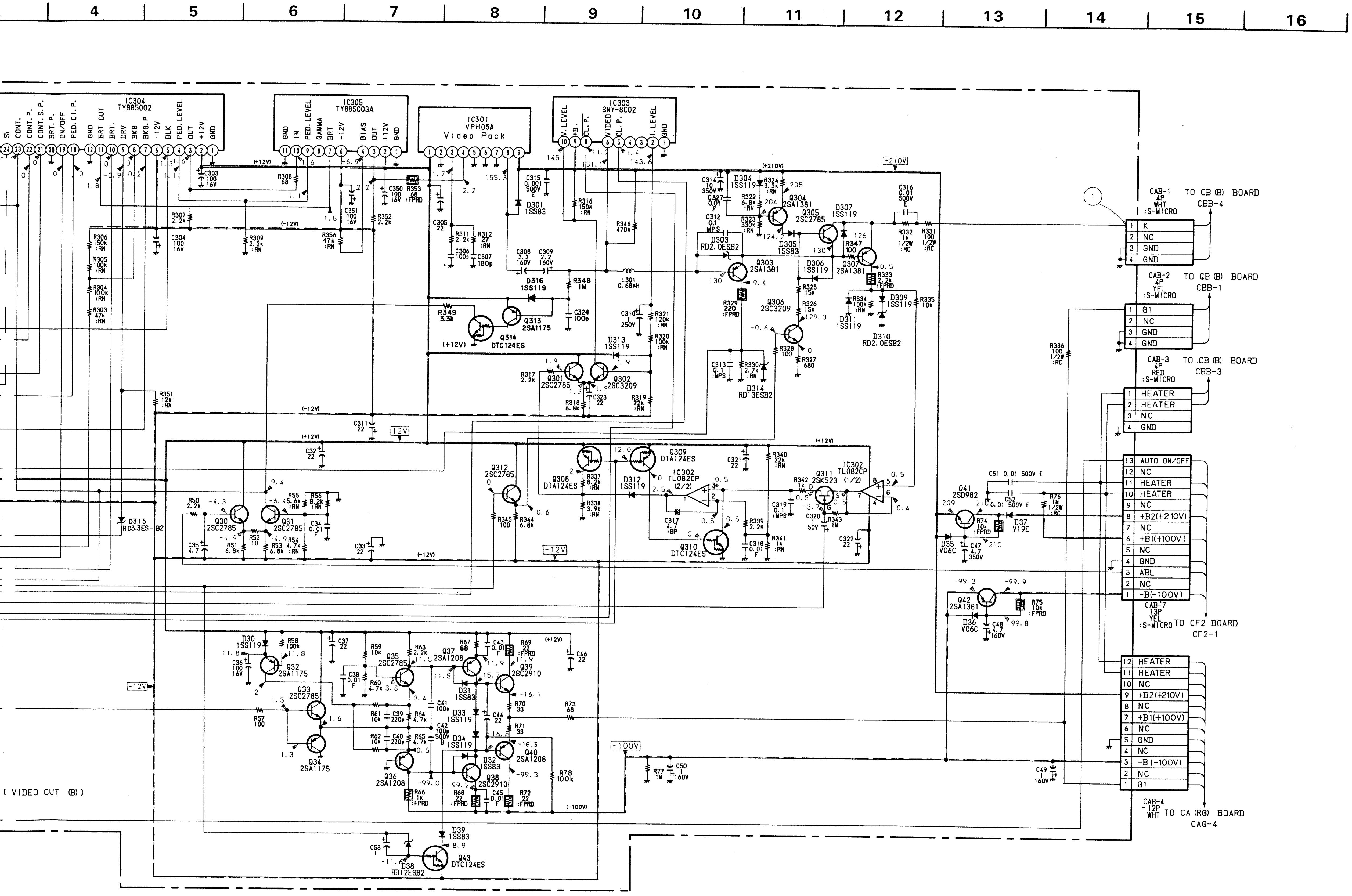
DIODE	
D1	C-7
D2	B-8
D3	B-9
D4	A-8
D5	E-7
D6	E-7
D7	B-2
D8	B-1
D9	E-2
D11	E-8
D12	E-10
D13	E-9
D101	B-12
D103	A-12
D104	B-13
D105	B-13
D106	A-13
D107	A-13
D109	A-12
D110	A-12
D111	A-12
D112	A-10
D113	B-11
D114	A-11
D115	D-11
D201	B-6
D203	A-6
D204	A-7
D205	A-7
D206	A-7
D207	A-6
D209	A-5
D210	A-5
D211	A-6
D212	A-4
D213	B-5
D214	A-5

CA (B)	IC301	VPH06	B VIDEO OUT
	302	TL082CP	B AUTO BKG
	303	SNY-8C02	B CLAMP
	304	TY885002A	B SIGNAL PROCESS
	305	TY885002A	B γ CORR
	Q30	2SC2785	ΣABL
	31	2SC2785	ΣABL
	32	2SA1175	OFF SPOT PROT
	33	2SC2785	BLK
	34	2SA1175	BLK
	35	2SC2785	BLK
	36	2SA1208	BLK
	37	2SA1208	BLK
	38	2SC2910	BLK
	39	2SC2910	BLK
	40	2SA1208	BLK
	41	2SD982	+210V RIPPLE FILTER
	42	2SA1381	− 100V RIPPLE FILTER
	43	DTC124ES	BRT PULSE GEN
	301	2SC2785	B CLAMP
	302	2SC3209	B CLAMP
	303	2SA1381	B IK DET-1
	304	2SA1381	B CURRENT SOURCE
	305	2SC2785	B IK DET-2
	306	2SC3209	B IK DET-2
	307	2SA1381	B IK DET-2
	308	DTA124ES	B AUTO BKG SW
	309	DTA124ES	B AUTO BKG SW
	310	DTC124ES	B AUTO BKG SW
	311	2SK523	B AUTO BKG
	312	2SC2785	B IK DET-2
	313	2SA1175	
	314	DTC124ES	
	D30	1SS119	OFF SPOT PROT
	31	1SS83	BLK
	32	1SS83	BLK
	33	1SS119	BLK
	34	1SS119	BLK
	35	V06C	+12V RIPPLE FILTER PROT
	36	V06C	−100V RIPPLE FILTER PROT
	37	V19E	+210V RIPPLE FILTER PROT
	38	RD12ESB2	BRT PULSE GEN
	39	1SS83	BRT PULSE GEN
	301	1SS83	B VIDEO OUT PROT
	303	RD2.0ESB2	B IK DET-1 PROT
	304	1SS119	B THERM COMP
	305	1SS83	B IK DET-2 PROT
	306	1SS119	B IK DET-2 PROT
	307	1SS119	B IK DET-2 PROT
	309	1SS119	B IK DET-2 PROT
	310	RD2.0ESB2	B IK DET-2 PROT
	311	1SS119	B IK DET-2 PROT
	312	1SS119	B AUTO BKG SW
	313	1SS119	B OFF SPOT PROT
	314	RD13ESB2	B IK DET-2 PROT
	315	RD3.3ESB2	B DRV
	316	1SS119	

CAB BOARD

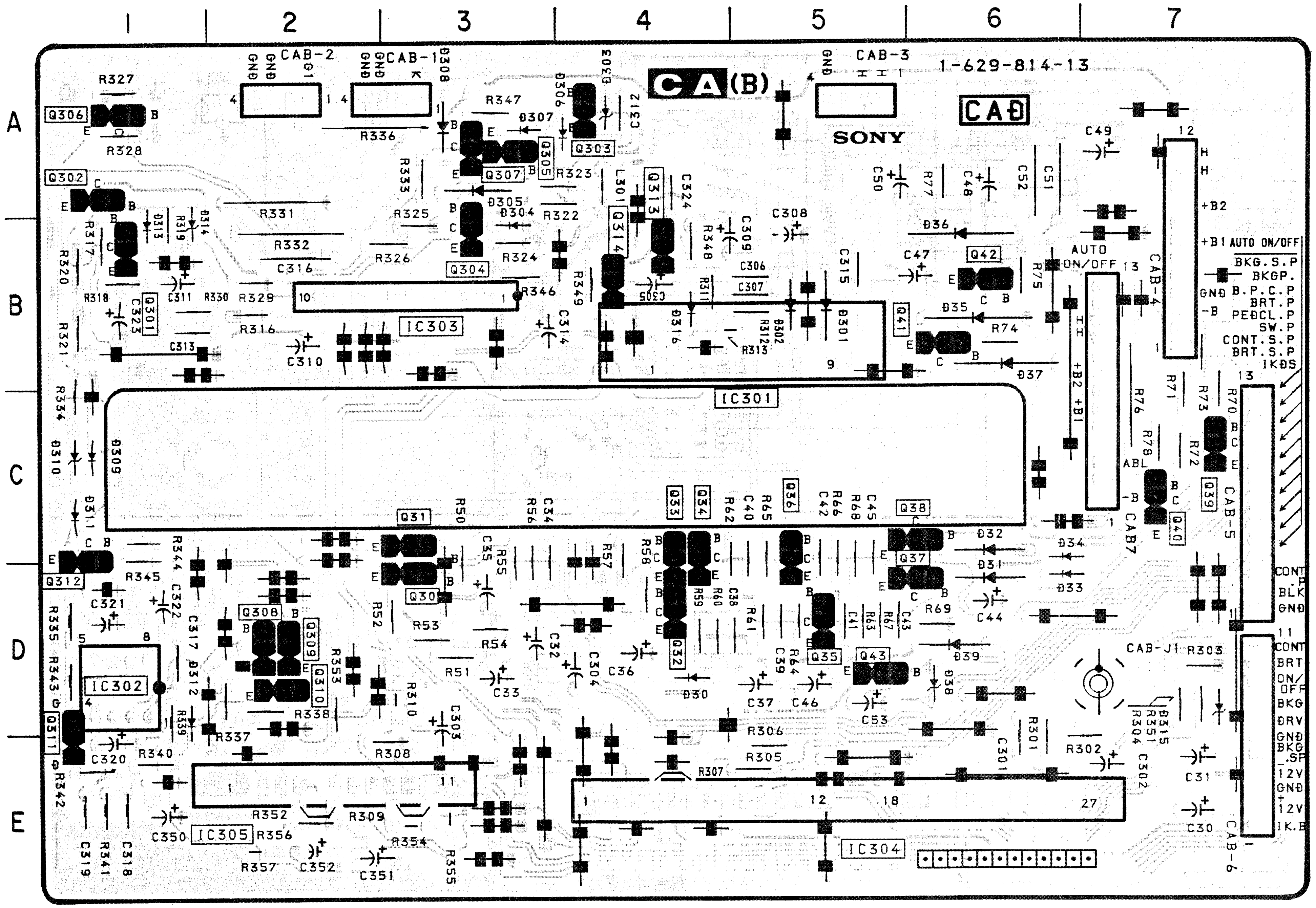



1
2
3
4
A
B
C
D
E
F
G
H
I
J
IC304
TY885002
GND
IN
B.P.C.P.
SW.P.
CONT.
CONT.P.
CONT.S.P.
BRT.P.
ON/OFF
PED.CI.P.
GND
BRT OUT
BRT.
DRV
BKG
BKG.P
-12V
CAB-J1
TO BM BOARD
J3
R301 150 :RN
R302 150 :RN
C301 22 16V :BP
C302 47
R306 150k :RN
R305 100k :RN
R304 100k :RN
R303 47k :RN
TO CA (RG) BOARD
CAG-5
CAB-5
13P
WHT
GND
BLK
CONT.P.
IKDS
BRT.S.P.
CONT.S.P.
SW.P.
PED CL.P.
BRT.P.
B.P.C.P.
BKG.P
BKG.SP
AUTO ON/OFF
IK.B
+12V
GND
-12V
BKG.SP
GND
DRV
BKG
ON/OFF
BRT
CONT
C30 100 16V
C31 100 16V
D315
RD3.3ES
CAB-6
11P
WHT
TO CA (RG) BOARD
CAG-6
-12V
CAB (VIDEO OUT (B))


4
5
6
7
8
9
10
11
12
13
14
15
16
IC304 TY8B5002
CONT. P.
CONT. S. P.
BRT. P.
ON/OFF
PED. Cl. P.
GND
BRT OUT
BRT.
DRV
BKG
BKG. P
-12V
BLK
PED. LEVEL
OUT
+12V
GND
IC305 TY8B5003A
GND
IN
PED. LEVEL
GAMMA
BRT
-12V
BIAS
OUT
+12V
GND
IC301 VPH05A Video Pack
IC303 SNY-8C02
V. LEVEL
+B.
CL. P.
VIDEO
CL. P.
I. LEVEL
GND
IC302 TL082CP (2/2)
IC302 TL082CP (1/2)
Q301 2SC2785
Q302 2SC3209
Q303 2SA1381
Q304 2SA1381
Q305 2SC2785
Q306 2SC3209
Q307 2SA1381
Q308 DTA124ES
Q309 DTA124ES
Q310 DTC124ES
Q311 2SK523
Q312 2SC2785
Q313 2SA1175
Q314 DTC124ES
Q30 2SC2785
Q31 2SC2785
Q32 2SA1175
Q33 2SC2785
Q34 2SA1175
Q35 2SC2785
Q36 2SA1208
Q37 2SA1208
Q38 2SC2910
Q39 2SC2910
Q40 2SA1208
Q41 2SD982
Q42 2SA1381
Q43 DTC124ES
D301 1SS83
D303 RD2.0ESB2
D304 1SS119
D305 1SS83
D306 1SS119
D307 1SS119
D309 1SS119
D310 RD2.0ESB2
D311 1SS119
D312 1SS119
D313 1SS119
D314 RD13ESB2
D315 RD3.3ES-B2
D316 1SS119
D30 1SS119
D31 1SS83
D32 1SS83
D33 1SS119
D34 1SS119
D35 V06C
D36 V06C
D37 V19E
D38 RD12ESB2
D39 1SS83
L301 0.68μH
+210V
+12V
-12V
12V
-100V
(+12V)
(-12V)
(-100V)
(+210V)
CAB-1 4P WHT :S-MICRO TO CB (B) BOARD CBB-4
1 K
2 NC
3 GND
4 GND
CAB-2 4P YEL :S-MICRO TO CB (B) BOARD CBB-1
1 G1
2 NC
3 GND
4 GND
CAB-3 4P RED :S-MICRO TO CB (B) BOARD CBB-3
1 HEATER
2 HEATER
3 NC
4 GND
13 AUTO ON/OFF
12 NC
11 HEATER
10 HEATER
9 NC
8 +B2(+210V)
7 NC
6 +B1(+100V)
5 NC
4 GND
3 ABL
2 NC
1 -B(-100V)
CAB-7 13P YEL :S-MICRO TO CF2 BOARD CF2-1
12 HEATER
11 HEATER
10 NC
9 +B2(+210V)
8 NC
7 +B1(+100V)
6 NC
5 GND
4 NC
3 -B(-100V)
2 NC
1 G1
CAB-4 12P WHT TO CA (RG) BOARD CAG-4
(VIDEO OUT (B))
①

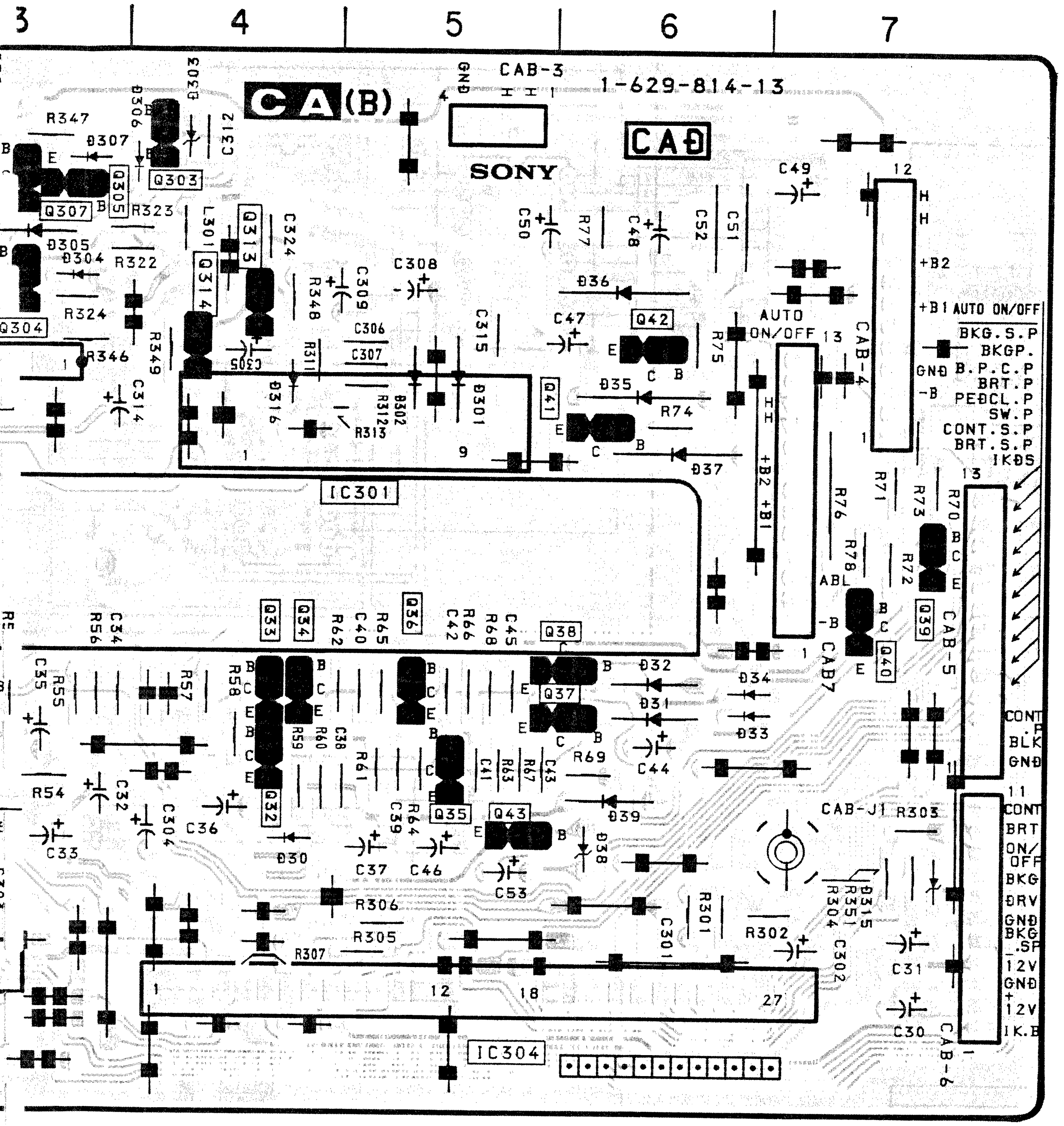
CAB [VIDEO OUT B]

– CAB BOARD –


1
2
3
4
5
6
7
A
B
C
D
E
CAB-2
CAB-1
CAB-3
CAB-4
CAB-5
CAB-6
CAB7
CAB-J1
CA(B)
1-629-814-13
CAD
SONY
GND
G1
K
H
+B2
+B1
AUTO ON/OFF
BKG.S.P
BKGP.
B.P.C.P
BRT.P
PEDCL.P
SW.P
CONT.S.P
BRT.S.P
IKDS
CONT
BLK
GND
BRT
ON/OFF
BKG
DRV
12V
IK.B
ABL
IC301
IC302
IC303
IC304
IC305
Q31
Q30
Q32
Q33
Q34
Q35
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
R327
R328
R331
R332
R336
R347
R333
R325
R323
R322
R324
R326
R349
R346
R348
R329
R330
R316
R317
R318
R319
R320
R321
R334
R335
R343
R342
R344
R345
R337
R338
R339
R340
R341
R352
R353
R354
R355
R356
R357
R308
R309
R310
R50
R51
R52
R53
R54
R55
R56
R57
R58
R59
R60
R61
R62
R63
R64
R65
R66
R67
R68
R69
R70
R71
R72
R73
R74
R75
R76
R77
R78
R301
R302
R303
R304
R305
R306
R307
R311
R312
R313
R351
C30
C31
C32
C33
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
C44
C45
C46
C47
C48
C49
C50
C51
C52
C53
C301
C302
C303
C304
C305
C306
C307
C308
C309
C310
C311
C312
C313
C314
C315
C316
C317
C318
C319
C320
C321
C322
C323
C324
C350
C351
C352
D30
D31
D32
D33
D34
D35
D36
D37
D38
D39
D301
D302
D303
D304
D305
D306
D307
D308
D309
D310
D311
D312
D313
D314
D315
D316
L301
B
C
E

CAB

[VIDEO OUT B]

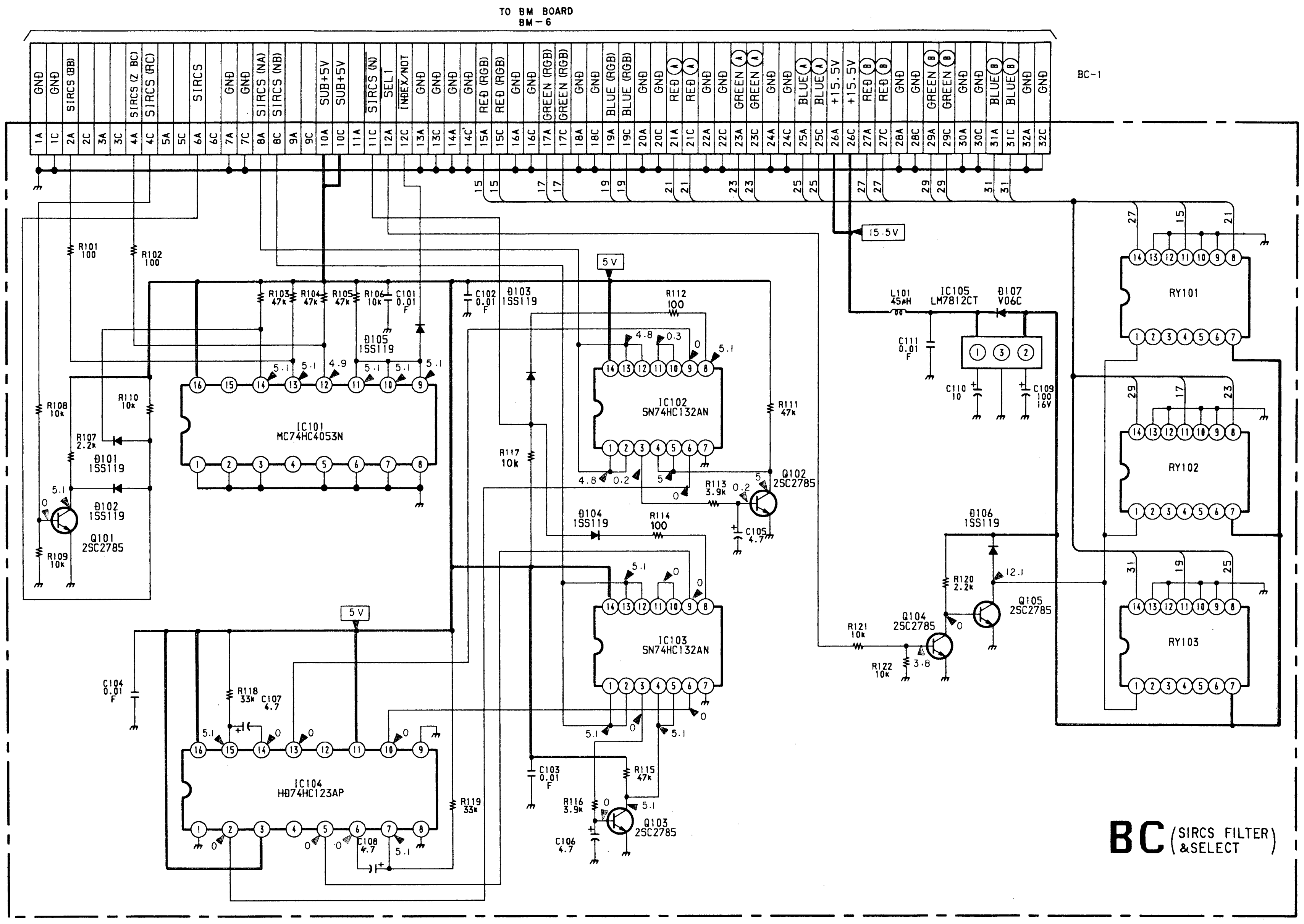

3
4
5
6
7
CA(B)
1-629-814-13
CAB-3
SONY
CAĐ
IC301
IC304
CAB-4
CAB-5
CAB-6
CAB7
CAB-J1
AUTO ON/OFF
+B2
+B1
BKG.S.P
BKGP.
GND
B.P.C.P
BRT.P
-B
PEDCL.P
SW.P
CONT.S.P
BRT.S.P
IKDS
ABL
CONT
BLK
BRT
ON/OFF
BKG
DRV
12V
IK.B
Q30
Q31
Q32
Q33
Q34
Q35
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
Q303
Q304
Q305
Q307
Q313
Q314
D30
D31
D32
D33
D34
D35
D36
D37
D38
D39
D301
D302
D303
D304
D305
D306
D307
D315
D316
R347
R323
R322
R324
R346
R349
R348
R311
R312
R313
R77
R75
R74
R76
R71
R73
R70
R78
R72
R303
R301
R302
R304
R305
R306
R307
R351
R54
R55
R56
R57
R58
R59
R60
R61
R62
R63
R64
R65
R66
R67
R68
R69
C30
C31
C32
C33
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
C44
C45
C46
C47
C48
C49
C50
C51
C52
C53
C301
C302
C304
C305
C306
C307
C308
C309
C312
C314
C315
C324
L301

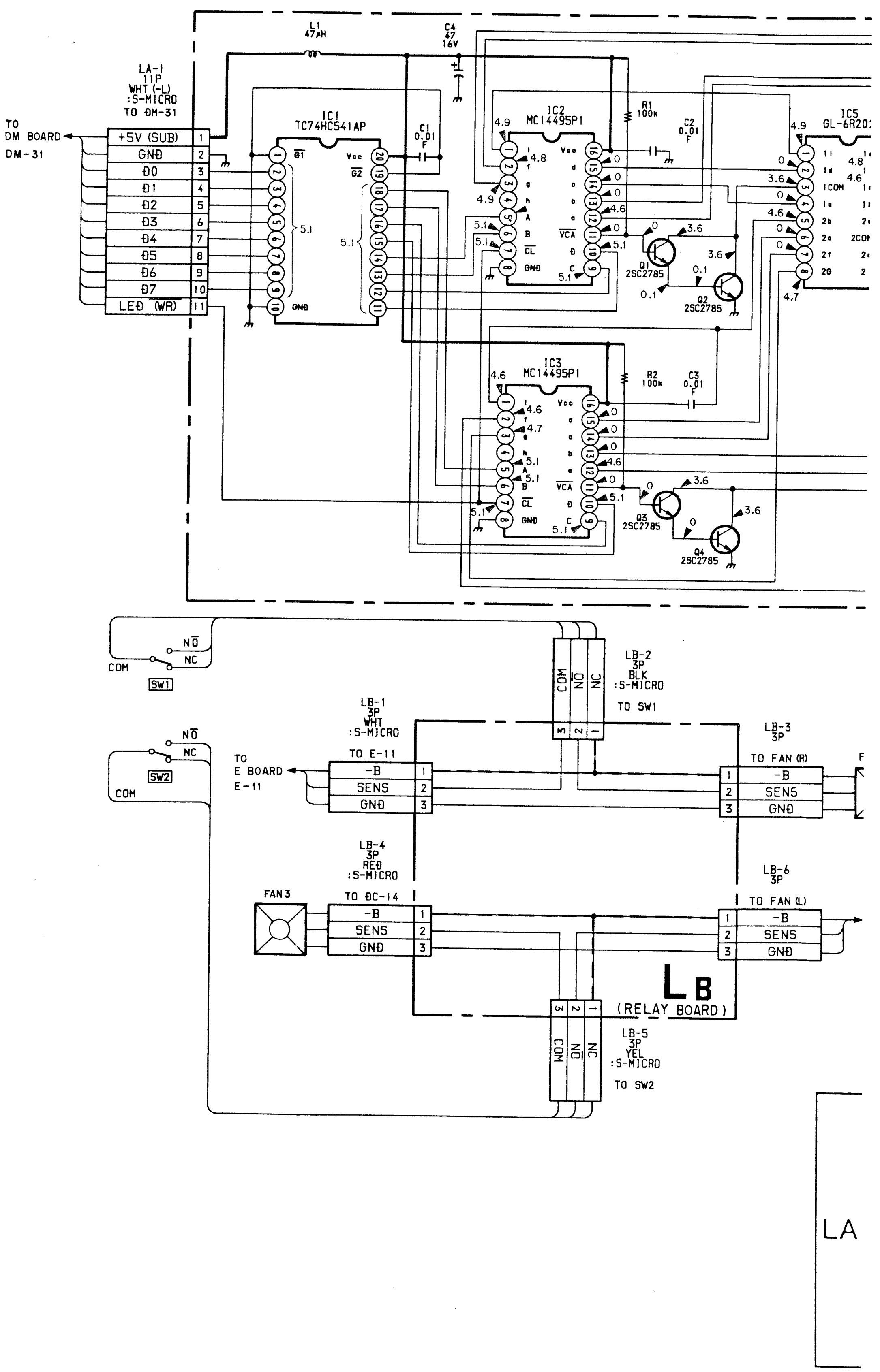
CAB BOARD

IC	
IC301	B-5
IC302	D-1
IC303	B-3
IC304	E-5
IC305	E-2

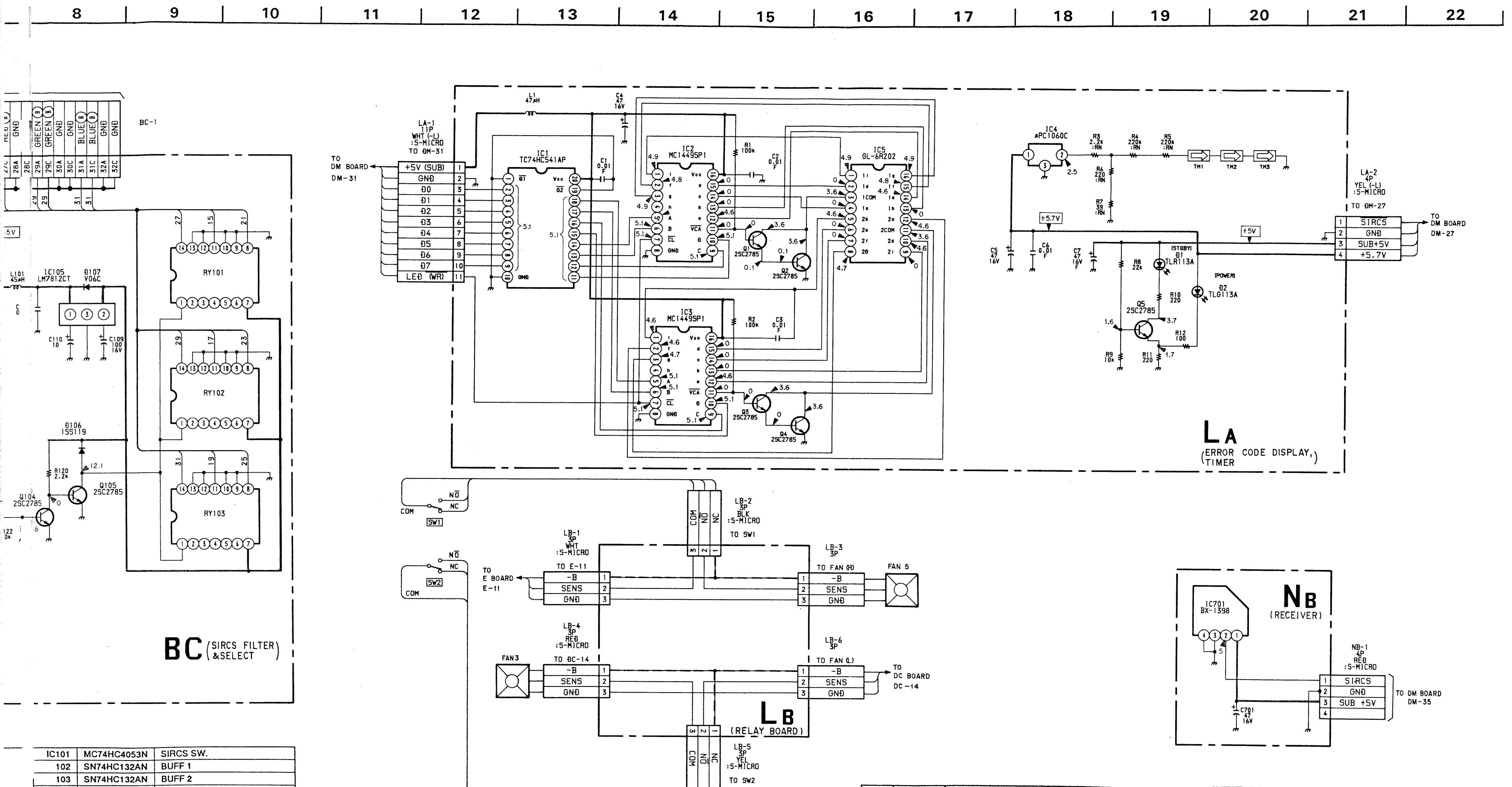
TRANSISTOR	
Q30	D-3
Q31	C-3
Q32	D-4
Q33	C-4
Q34	C-4
Q35	D-5
Q36	C-5
Q37	D-5
Q38	C-5
Q39	C-7
Q40	C-7
Q41	B-6
Q42	B-6
Q43	D-5
Q301	B-1
Q302	A-1
Q303	A-4
Q304	B-3
Q305	A-3
Q306	A-1
Q307	A-3
Q308	D-2
Q309	D-2
Q310	D-2
Q311	D-1
Q312	C-1
Q313	B-4
Q314	B-4

DIODE	
D30	D-4
D31	D-6
D32	C-6
D33	D-6
D34	C-6
D35	B-6
D36	B-6
D37	B-6
D38	D-6
D39	D-6
D301	B-5
D303	A-4
D304	B-3
D305	A-3
D306	A-4
D307	A-3
D309	C-1
D310	C-1
D311	C-1
D312	D-1
D313	B-1
D314	B-1
D315	D-7
D316	B-4


TO BM BOARD
BM-6
BC-1
GND
SIRCS (BB)
SIRCS (Z BC)
SIRCS (RC)
SIRCS
SIRCS (NA)
SIRCS (NB)
SUB+5V
SIRCS (N)
SEL1
INDEX/NOT
RED (RGB)
GREEN (RGB)
BLUE (RGB)
RED (A)
GREEN (A)
BLUE (A)
+15.5V
RED (B)
GREEN (B)
BLUE (B)
15.5V
5V
IC101
MC74HC4053N
IC102
SN74HC132AN
IC103
SN74HC132AN
IC104
HD74HC123AP
L101
45μH
IC105
LM7812CT
D107
V06C
RY101
RY102
RY103
Q101
2SC2785
Q102
2SC2785
Q103
2SC2785
Q104
2SC2785
Q105
2SC2785
D101
1SS119
D102
1SS119
D103
1SS119
D104
1SS119
D105
1SS119
D106
1SS119
BC (SIRCS FILTER &SELECT)


TO DM BOARD
DM-31
LA-1
11P
WHT (-L)
:S-MICRO
TO DM-31
+5V (SUB)
GND
D0
D1
D2
D3
D4
D5
D6
D7
LED (WR)
IC1
TC74HC541AP
L1
47μH
C4
47
16V
IC2
MC14495P1
IC3
MC14495P1
IC5
GL-6R20
Q1
2SC2785
Q2
2SC2785
Q3
2SC2785
Q4
2SC2785
SW1
SW2
COM
NO
NC
LB-1
3P
WHT
:S-MICRO
TO E-11
TO E BOARD
E-11
-B
SENS
GND
LB-2
3P
BLK
:S-MICRO
TO SW1
LB-3
3P
TO FAN (R)
LB-4
3P
RED
:S-MICRO
TO BC-14
FAN3
LB-5
3P
YEL
:S-MICRO
TO SW2
LB-6
3P
TO FAN (L)
LB (RELAY BOARD)
LA

BC	IC101	MC74HC4053N	SIRCS SW.
	102	SN74HC132AN	BUFF 1
	103	SN74HC132AN	BUFF 2
	104	HD74HC123AP	GATE PULSE GEN
	105	LM7812CT	+12V REG
	Q101	2SC2785	SIRCS INV1
	102	2SC2785	SIRCS INV2
	103	2SC2785	SIRCS INV3
	104	2SC2785	MODE SW1
	105	2SC2785	MODE SW2
	D101	1SS119	SIRCS OR1
	102	1SS119	SIRCS OR2
	103	1SS119	SIRCS OR3
	104	1SS119	SIRCS OR4
	105	1SS119	SW
	106	1SS119	RY PROT
	107	V06C	+12V REG PROT


8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
BC-1
BC (SIRCS FILTER &SELECT)
RY101
RY102
RY103
L101 45μH
IC105 LM7812CT
D107 V06C
C110 10
C109 100 16V
D106 1SS119
R120 2.2k
Q104 2SC2785
Q105 2SC2785
LA-1 11P WHT (-L) :S-MICRO TO DM-31
TO DM BOARD DM-31
+5V (SUB)
GND
D0
D1
D2
D3
D4
D5
D6
D7
LED (WR)
IC1 TC74HC541AP
C1 0.01 F
L1 47μH
C4 47 16V
IC2 MC14495P1
R1 100k
C2 0.01 F
IC5 GL-6R202
IC3 MC14495P1
R2 100k
C3 0.01 F
Q1 2SC2785
Q2 2SC2785
Q3 2SC2785
Q4 2SC2785
LA (ERROR CODE DISPLAY, TIMER)
IC4 μPC1060C
R3 2.2k :RN
R4 220k :RN
R5 220k :RN
R6 220 :RN
R7 39 :RN
TM1
TM2
TM3
+5.7V
+5V
C5 47 16V
C6 0.01 F
C7 47 16V F
R8 22k
D1 TLR113A (STBY)
D2 TLG113A (POWER)
R10 220
Q5 2SC2785
R12 100
R9 10k
R11 220
LA-2 4P YEL (-L) :S-MICRO TO DM-27
SIRCS
GND
SUB+5V
+5.7V
TO DM BOARD DM-27
SW1
SW2
COM
NO
NC
LB-2 3P BLK :S-MICRO TO SW1
LB-1 3P WHT :S-MICRO TO E-11
TO E BOARD E-11
LB-3 3P TO FAN (R)
FAN 5
-B
SENS
GND
LB-4 3P RED :S-MICRO TO DC-14
FAN3
LB-6 3P TO FAN (L)
TO DC BOARD DC-14
LB (RELAY BOARD)
LB-5 3P YEL :S-MICRO TO SW2
NB (RECEIVER)
IC701 BX-1398
NB-1 4P RED :S-MICRO
SIRCS
GND
SUB +5V
TO DM BOARD DM-35
C701 47 16V

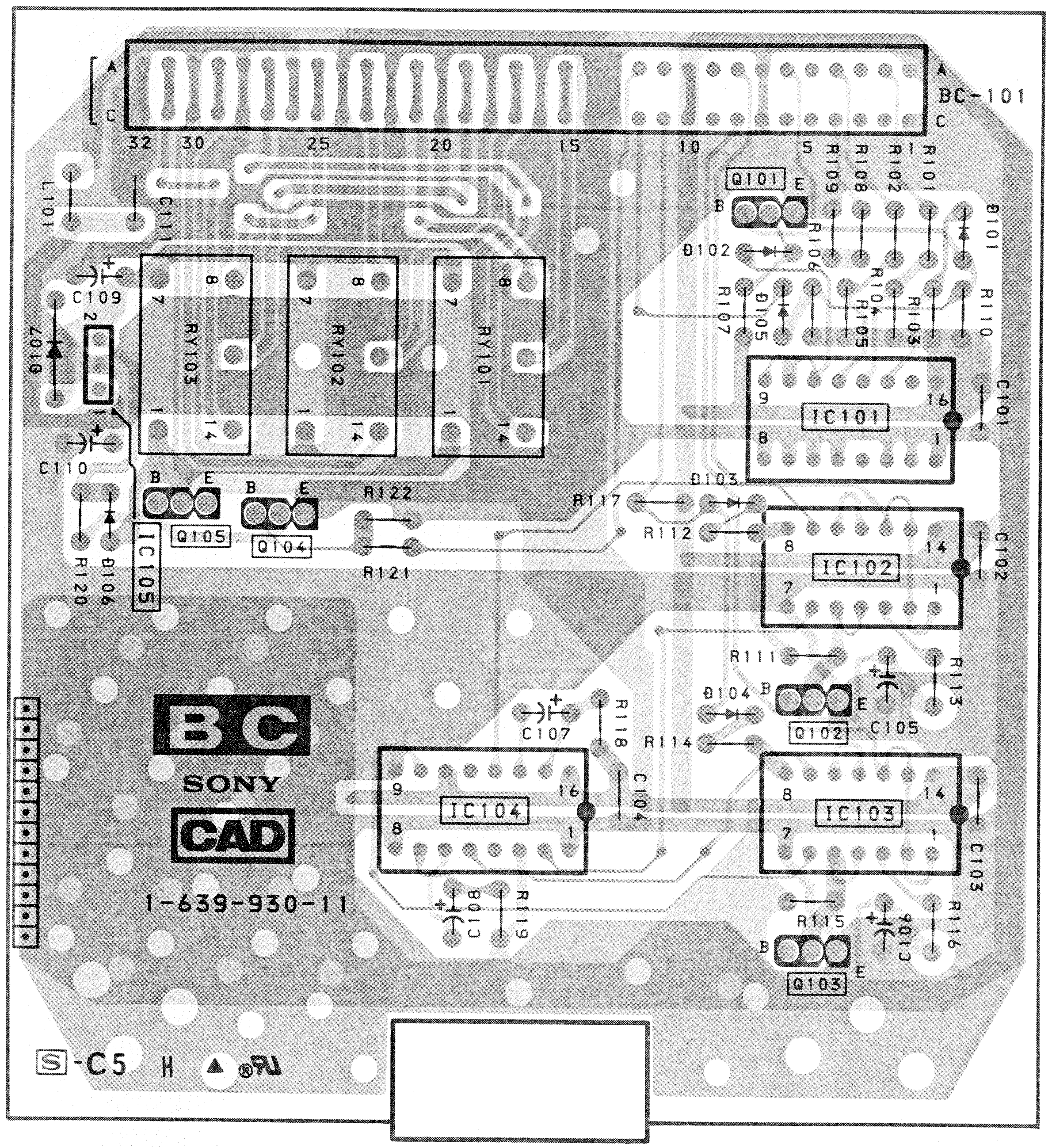
IC101	MC74HC4053N	SIRCS SW.
102	SN74HC132AN	BUFF 1
103	SN74HC132AN	BUFF 2
104	HD74HC123AP	GATE PULSE GEN
105	LM7812CT	+12V REG
Q101	2SC2785	SIRCS INV1
102	2SC2785	SIRCS INV2
103	2SC2785	SIRCS INV3
104	2SC2785	MODE SW1
105	2SC2785	MODE SW2
D101	1SS119	SIRCS OR1
102	1SS119	SIRCS OR2
103	1SS119	SIRCS OR3
104	1SS119	SIRCS OR4
105	1SS119	SW
106	1SS119	RY PROT
107	V06C	+12V REG PROT

LA	IC1	TC74HC541AP	DECODER
	2	MC14495P1	DECODER
	3	MC14495P1	DECODER
	4	μPC1060C	CONSTANT VOLTAGE
	5	GL-6R202	DISPLAY
	Q1	2SC2785	BUFFER
	2	2SC2785	BUFFER
	3	2SC2785	BUFFER
	4	2SC2785	BUFFER
	5	2SC2785	LED DRIVE
	D1	TLG113A	STDBY IND
	2	TLG113A	POWER IND

NB	IC701	BX-1398	SIRCS

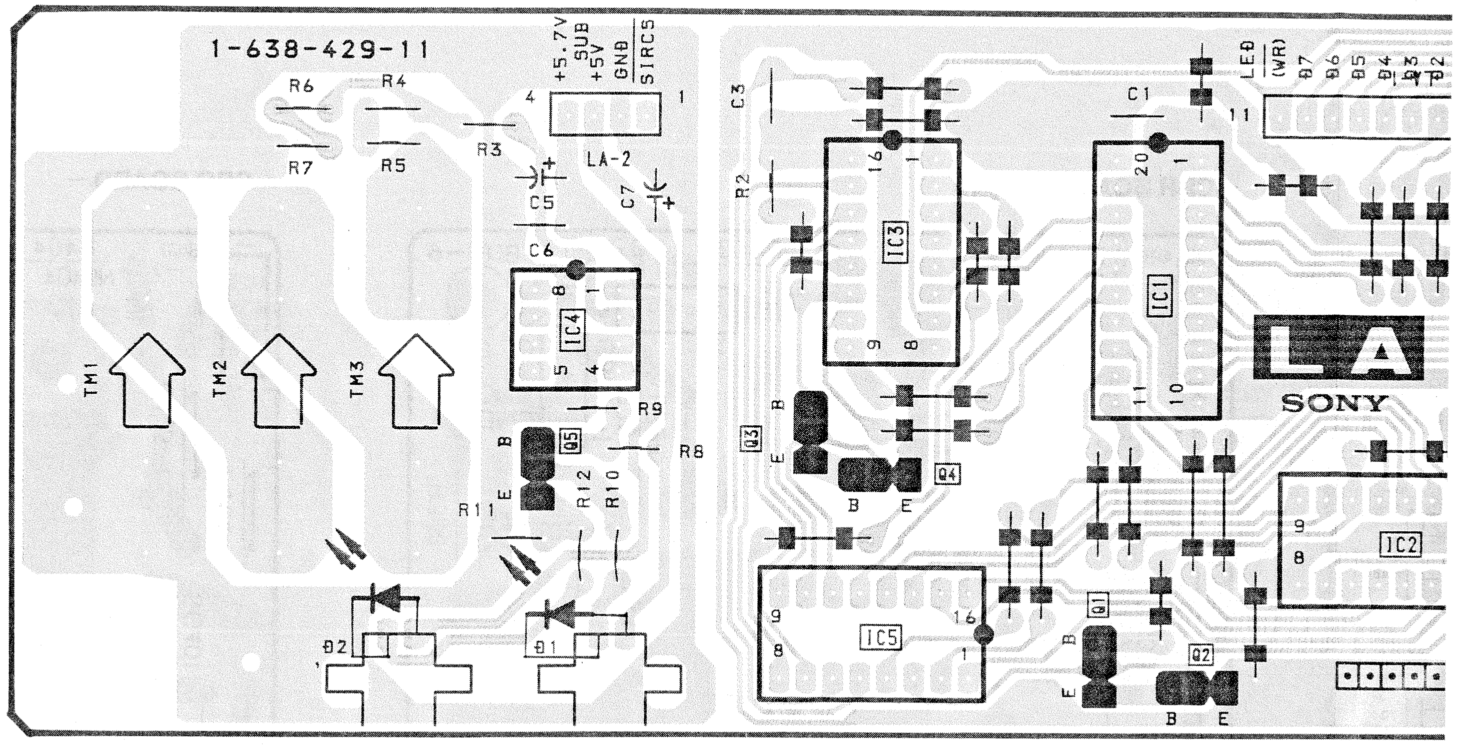
BC [SIRCS FILTER & SELECT]

– BC BOARD –


BC-101
A
C
32
30
25
20
15
10
5
1
L101
C111
C109
Q101
B
E
D102
R109
R108
R102
R101
D101
R106
R104
R105
R103
R107
D105
R110
D107
RY103
RY102
RY101
7
8
1
14
IC101
9
16
C101
C110
B
E
Q105
Q104
R122
R121
R117
R112
D103
IC102
C102
R120
D106
IC105
R111
D104
R113
Q102
C105
C107
R118
R114
IC104
C104
IC103
C103
C108
R119
R115
C106
R116
Q103
BC
SONY
CAD
1-639-930-11
S-C5
H

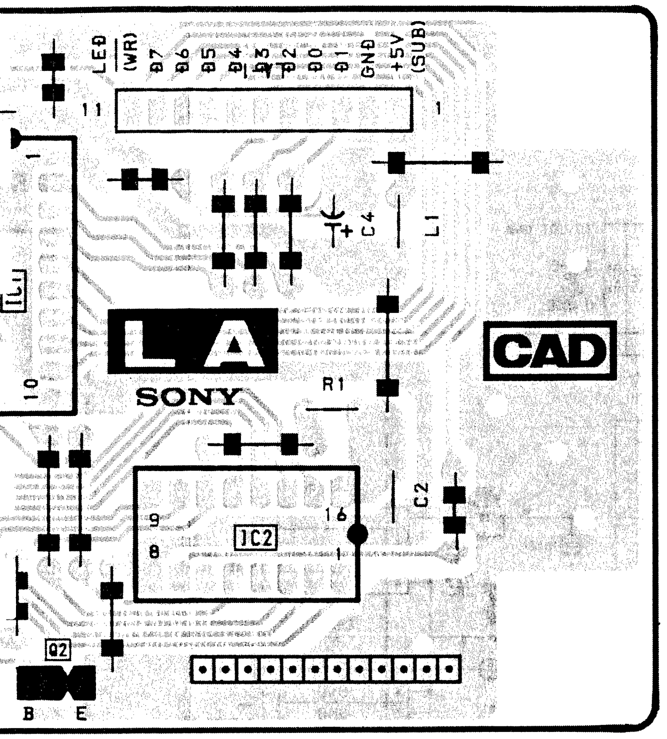
LA [ERROR CODE DISPLAY, TIMER]

– LA BOARD –


1-638-429-11
+5.7V
SUB
+5V
GND
SIRCS
LA-2
4
1
R6
R4
R7
R5
R3
C5
C6
C7
IC4
R9
R8
Q5
R12
R10
R11
B
E
TM1
TM2
TM3
D2
D1
C3
R2
IC3
Q3
Q4
C1
IC1
20
LED
(WR)
D7
D6
D5
D4
D3
D2
LA
SONY
IC2
IC5
Q1
Q2

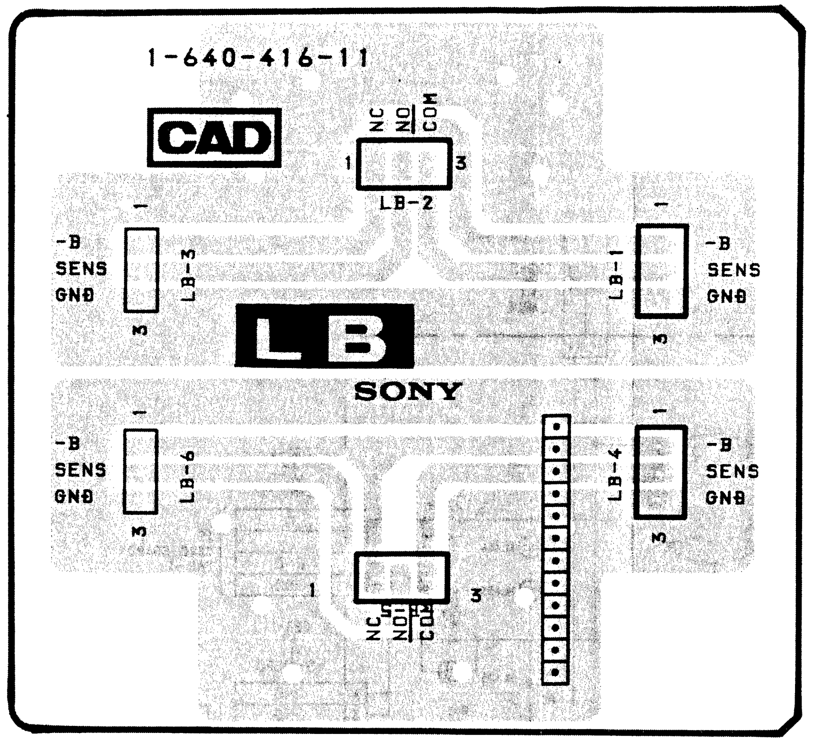
░ : Pattern from the side which enables seeing.

▒ : Pattern of the rear side.


LED
(WR)
D7
D6
D5
D4
D3
D2
D0
D1
GND
+5V
(SUB)
11
1
C4
L1
LA
SONY
CAD
R1
IC2
16
8
9
C2
10
Q2
B
E

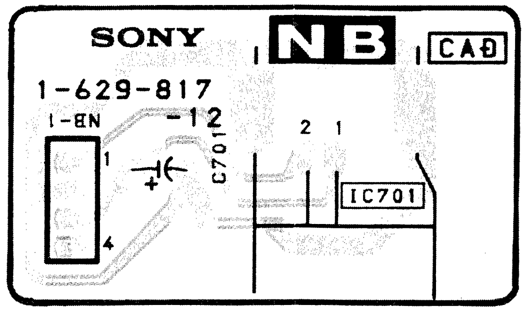
LB [RELAY BOARD]

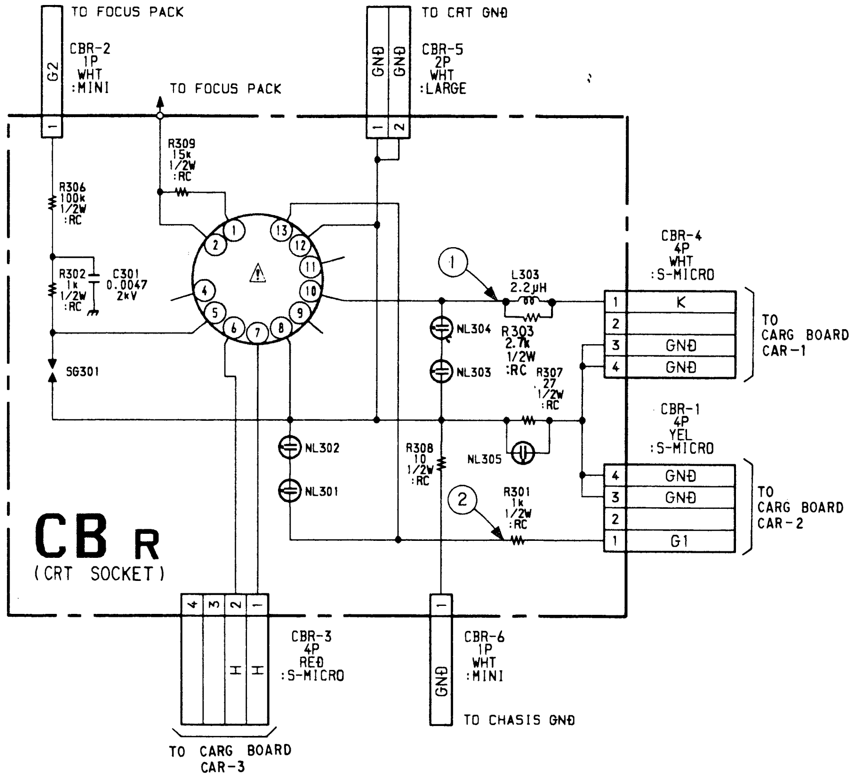
– LB BOARD –

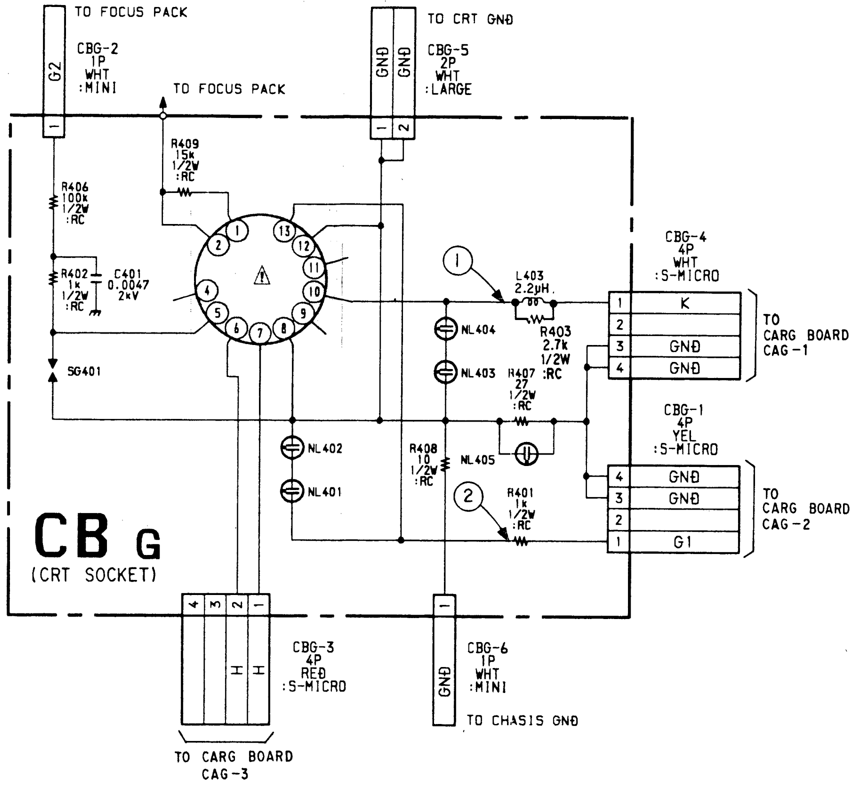

1-640-416-11
CAD
NC
NO
COM
1
3
LB-2
LB-1
LB-3
LB-4
LB-6
-B
SENS
GND
LB
SONY

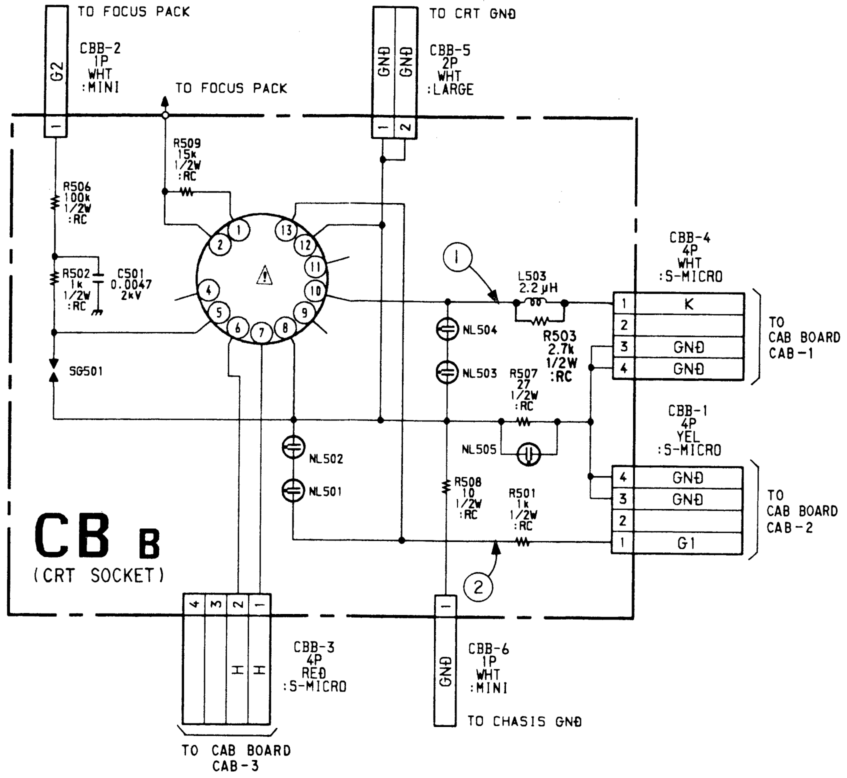
NB [RECIEVER]

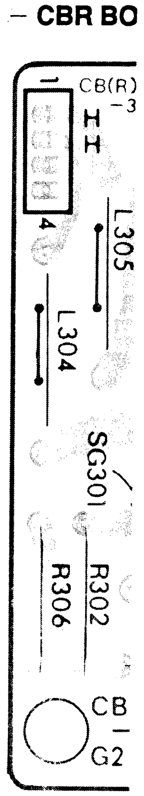
– NB BOARD –

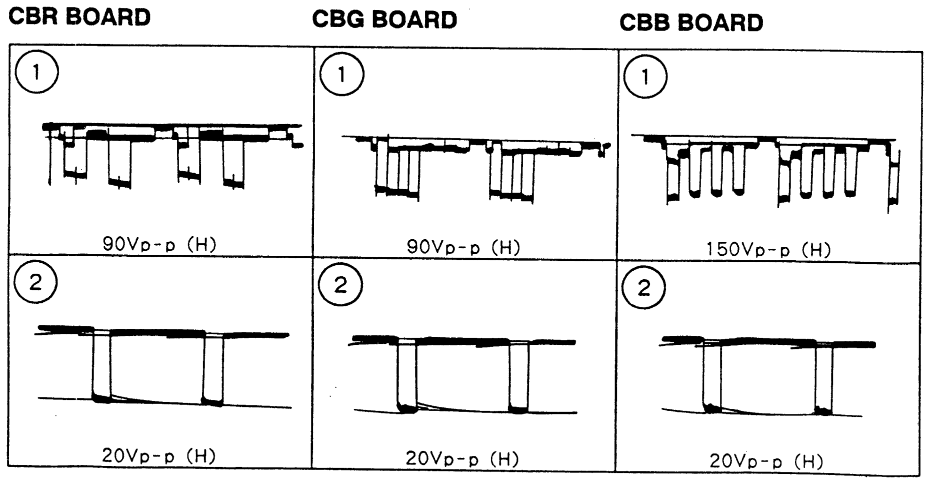

SONY
NB
CAD
1-629-817
-12
1-BN
1
4
C701
2 1
IC701


CB R
(CRT SOCKET)
TO FOCUS PACK
CBR-2 1P WHT :MINI
G2
TO FOCUS PACK
TO CRT GND
CBR-5 2P WHT :LARGE
GND
R309 15k 1/2W :RC
R306 100k 1/2W :RC
R302 1k 1/2W :RC
C301 0.0047 2kV
SG301
L303 2.2μH
R303 2.7k 1/2W :RC
R307 27 1/2W :RC
NL304
NL303
NL302
NL301
NL305
R308 10 1/2W :RC
R301 1k 1/2W :RC
CBR-4 4P WHT :S-MICRO
K
GND
TO CARG BOARD CAR-1
CBR-1 4P YEL :S-MICRO
G1
TO CARG BOARD CAR-2
CBR-3 4P RED :S-MICRO
H
TO CARG BOARD CAR-3
CBR-6 1P WHT :MINI
TO CHASIS GND


CB G
(CRT SOCKET)
TO FOCUS PACK
CBG-2 1P WHT :MINI
G2
TO FOCUS PACK
TO CRT GND
CBG-5 2P WHT :LARGE
GND
R409 15k 1/2W :RC
R406 100k 1/2W :RC
R402 1k 1/2W :RC
C401 0.0047 2kV
SG401
L403 2.2μH
R403 2.7k 1/2W :RC
R407 27 1/2W :RC
NL404
NL403
NL402
NL401
NL405
R408 10 1/2W :RC
R401 1k 1/2W :RC
CBG-4 4P WHT :S-MICRO
K
GND
TO CARG BOARD CAG-1
CBG-1 4P YEL :S-MICRO
G1
TO CARG BOARD CAG-2
CBG-3 4P RED :S-MICRO
H
TO CARG BOARD CAG-3
CBG-6 1P WHT :MINI
TO CHASIS GND


CB B
(CRT SOCKET)
TO FOCUS PACK
CBB-2 1P WHT :MINI
G2
TO FOCUS PACK
TO CRT GND
CBB-5 2P WHT :LARGE
GND
R509 15k 1/2W :RC
R506 100k 1/2W :RC
R502 1k 1/2W :RC
C501 0.0047 2kV
SG501
L503 2.2μH
R503 2.7k 1/2W :RC
R507 27 1/2W :RC
NL504
NL503
NL502
NL501
NL505
R508 10 1/2W :RC
R501 1k 1/2W :RC
CBB-4 4P WHT :S-MICRO
K
GND
TO CAB BOARD CAB-1
CBB-1 4P YEL :S-MICRO
G1
TO CAB BOARD CAB-2
CBB-3 4P RED :S-MICRO
H
TO CAB BOARD CAB-3
CBB-6 1P WHT :MINI
TO CHASIS GND


– CBR BO
CB(R) -3
L305
L304
SG301
R302
R306
CB - G2

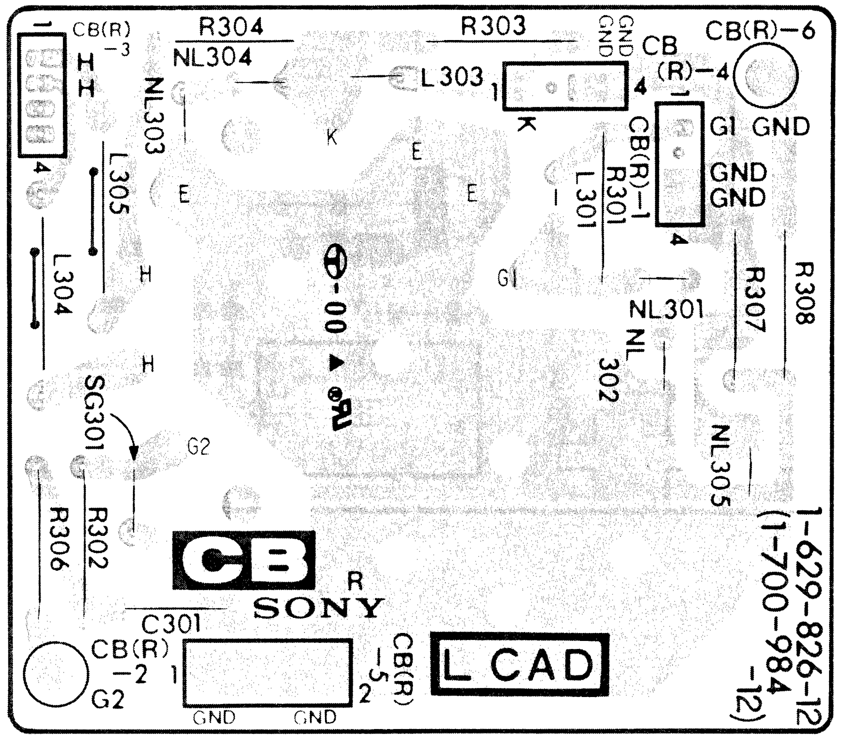

CBR BOARD
CBG BOARD
CBB BOARD
①
90Vp-p (H)
90Vp-p (H)
150Vp-p (H)
②
20Vp-p (H)
20Vp-p (H)
20Vp-p (H)

CBR CBG CBB [CRT SOCKET]

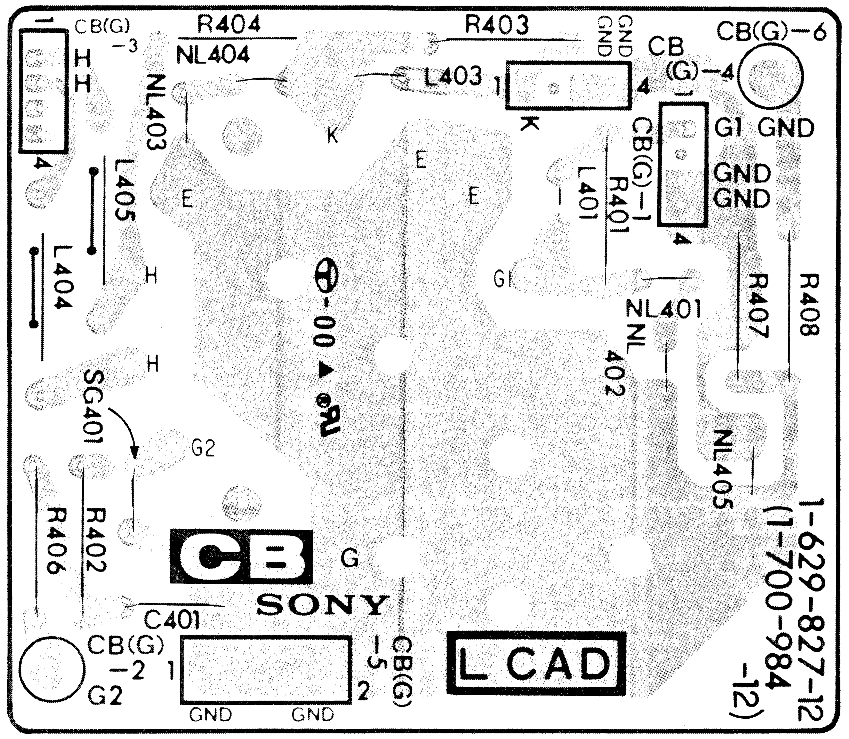
TO
CAB BOARD
CAB-1

TO
CAB BOARD
CAB-2

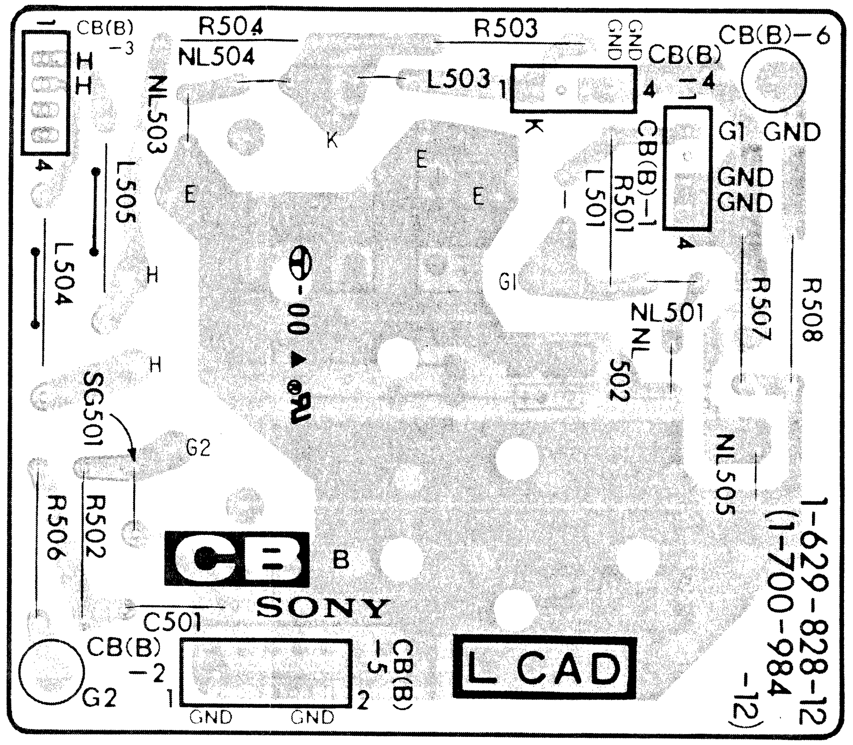
– CBR BOARD –

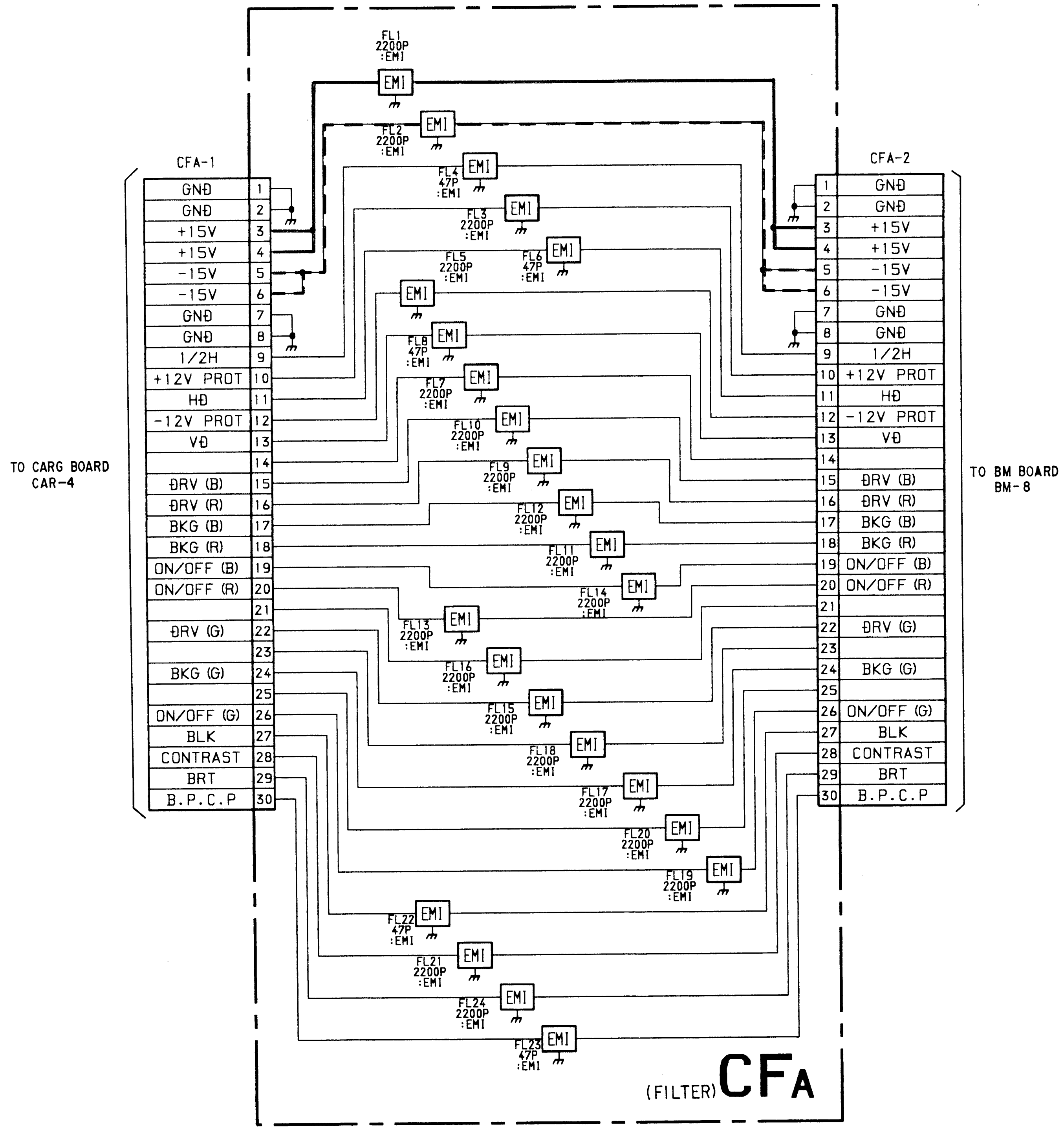

CB(R)-3
R304
NL304
R303
GND
GND
CB (R)-4
CB(R)-6
L303
K
NL303
L305
E
CB(R)-1
R301
L301
G1 GND
GND
GND
L304
H
G1
NL301
NL 302
R307
R308
SG301
G2
NL305
R306
R302
CB
R
SONY
C301
CB(R)-2
G2
CB(R)-5
GND
GND
L CAD
1-629-826-12
(1-700-984-12)

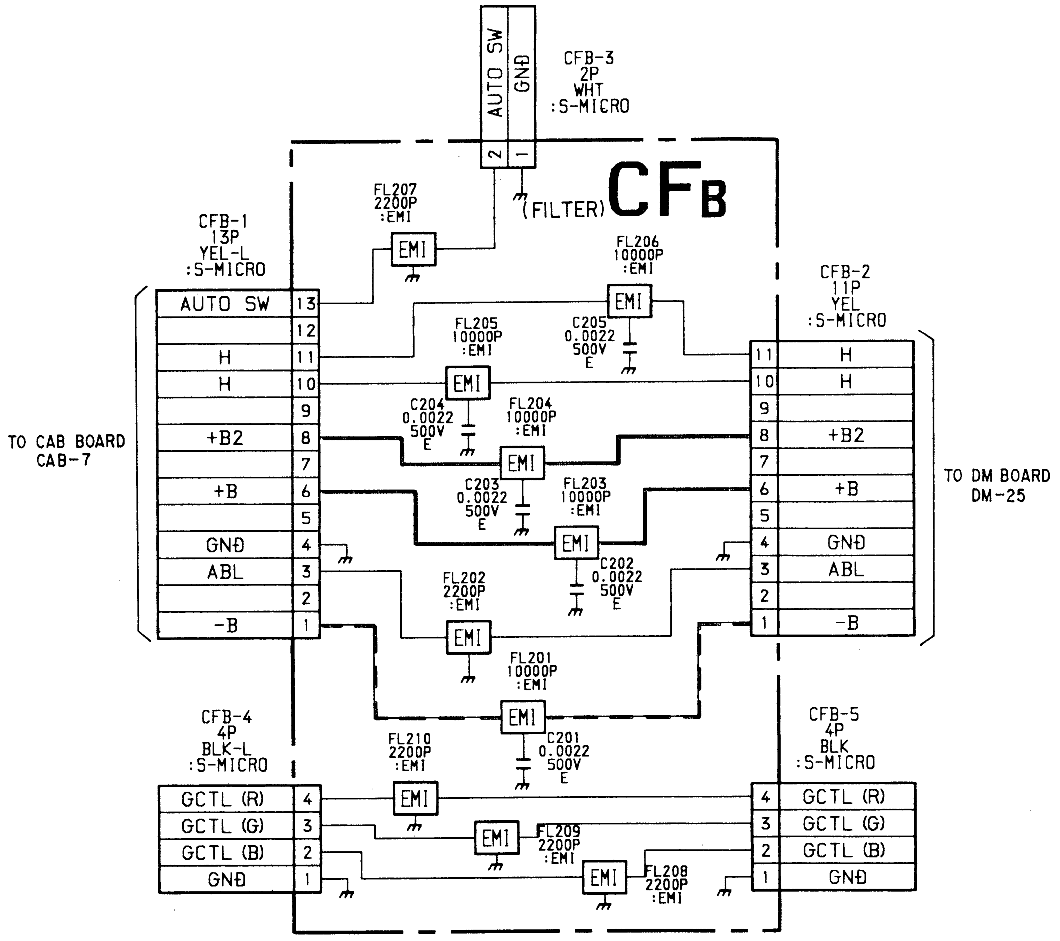
– CBG BOARD –


CB(G)-3
R404
NL404
R403
GND
GND
CB (G)-4
CB(G)-6
L403
K
NL403
L405
E
CB(G)-1
R401
L401
G1 GND
GND
GND
L404
H
G1
NL401
NL 402
R407
R408
SG401
G2
NL405
R406
R402
CB
G
SONY
C401
CB(G)-2
G2
CB(G)-5
GND
GND
L CAD
1-629-827-12
(1-700-984-12)

– CBB BOARD –

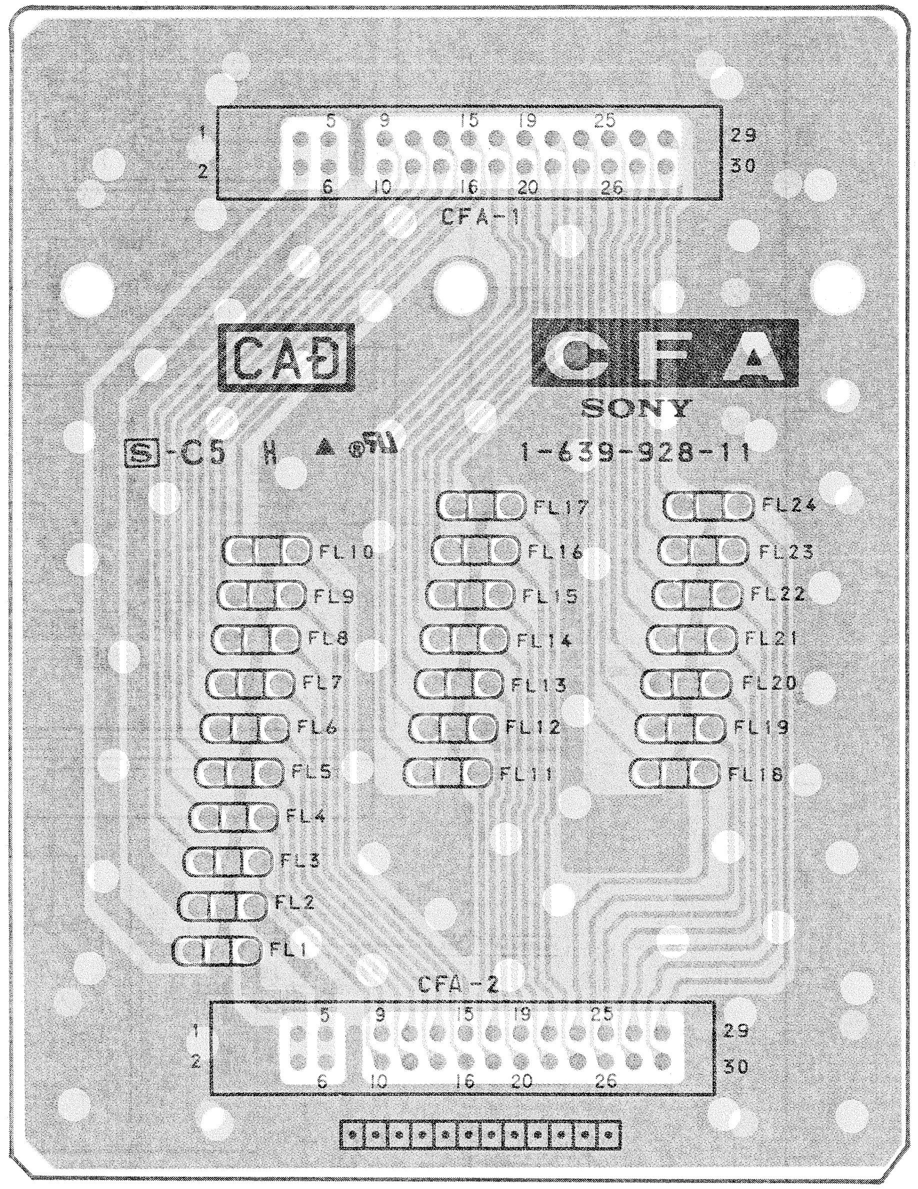

CB(B)-3
R504
NL504
R503
GND
GND
CB(B)-4
CB(B)-6
L503
K
NL503
L505
E
CB(B)-1
R501
L501
G1 GND
GND
GND
L504
H
G1
NL501
NL 502
R507
R508
SG501
G2
NL505
R506
R502
CB
B
SONY
C501
CB(B)-2
G2
CB(B)-5
GND
GND
L CAD
1-629-828-12
(1-700-984-12)


TO CARG BOARD
CAR-4
CFA-1
GND
GND
+15V
+15V
-15V
-15V
GND
GND
1/2H
+12V PROT
HD
-12V PROT
VD
DRV (B)
DRV (R)
BKG (B)
BKG (R)
ON/OFF (B)
ON/OFF (R)
DRV (G)
BKG (G)
ON/OFF (G)
BLK
CONTRAST
BRT
B.P.C.P
FL1 2200P :EMI
FL2 2200P :EMI
FL4 47P :EMI
FL3 2200P :EMI
FL5 2200P :EMI
FL6 47P :EMI
FL8 47P :EMI
FL7 2200P :EMI
FL10 2200P :EMI
FL9 2200P :EMI
FL12 2200P :EMI
FL11 2200P :EMI
FL14 2200P :EMI
FL13 2200P :EMI
FL16 2200P :EMI
FL15 2200P :EMI
FL18 2200P :EMI
FL17 2200P :EMI
FL20 2200P :EMI
FL19 2200P :EMI
FL22 47P :EMI
FL21 2200P :EMI
FL24 2200P :EMI
FL23 47P :EMI
EMI
CFA-2
GND
GND
+15V
+15V
-15V
-15V
GND
GND
1/2H
+12V PROT
HD
-12V PROT
VD
DRV (B)
DRV (R)
BKG (B)
BKG (R)
ON/OFF (B)
ON/OFF (R)
DRV (G)
BKG (G)
ON/OFF (G)
BLK
CONTRAST
BRT
B.P.C.P
TO BM BOARD
BM-8
(FILTER) CFA

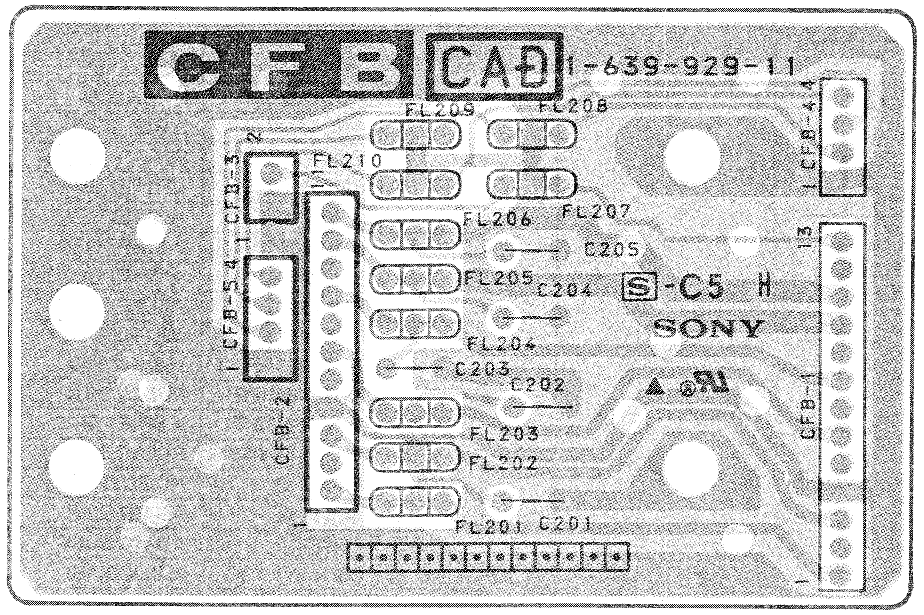

AUTO SW
GND
CFB-3
2P
WHT
:S-MICRO
(FILTER) CFB
CFB-1
13P
YEL-L
:S-MICRO
TO CAB BOARD
CAB-7
AUTO SW
H
H
+B2
+B
GND
ABL
-B
FL207 2200P :EMI
FL206 10000P :EMI
FL205 10000P :EMI
C205 0.0022 500V E
C204 0.0022 500V E
FL204 10000P :EMI
C203 0.0022 500V E
FL203 10000P :EMI
C202 0.0022 500V E
FL202 2200P :EMI
FL201 10000P :EMI
C201 0.0022 500V E
EMI
CFB-2
11P
YEL
:S-MICRO
H
H
+B2
+B
GND
ABL
-B
TO DM BOARD
DM-25
CFB-4
4P
BLK-L
:S-MICRO
GCTL (R)
GCTL (G)
GCTL (B)
GND
FL210 2200P :EMI
FL209 2200P :EMI
FL208 2200P :EMI
CFB-5
4P
BLK
:S-MICRO
GCTL (R)
GCTL (G)
GCTL (B)
GND

CFA **CFB** [FILTER]

– CFA BOARD –

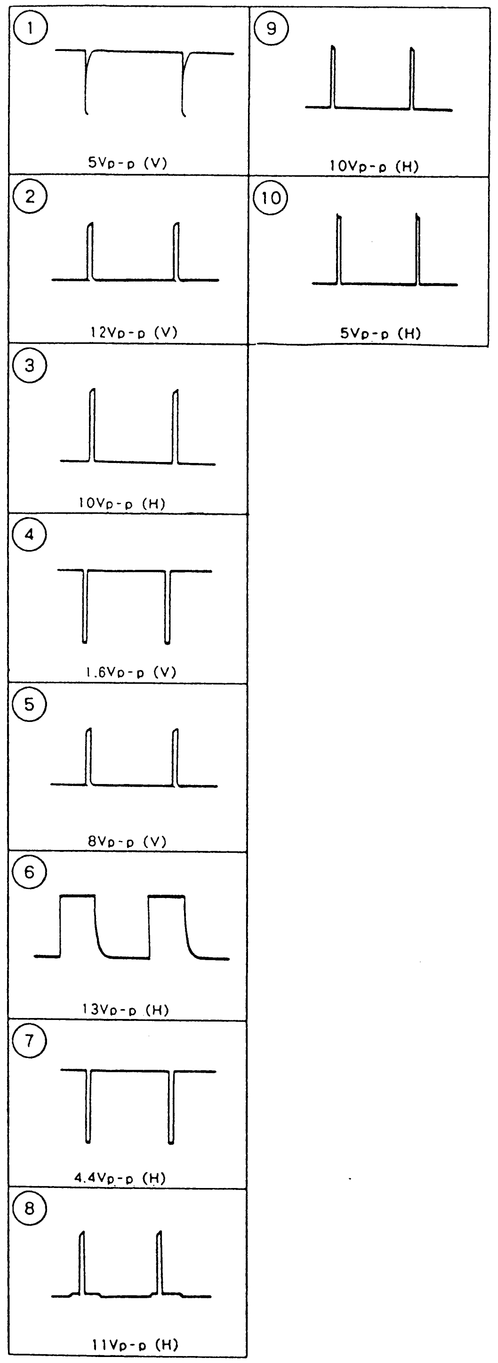

CFA-1
1
2
5
9
15
19
25
29
30
6
10
16
20
26
CAD
CFA
SONY
S-C5 H
1-639-928-11
FL17
FL24
FL10
FL16
FL23
FL9
FL15
FL22
FL8
FL14
FL21
FL7
FL13
FL20
FL6
FL12
FL19
FL5
FL11
FL18
FL4
FL3
FL2
FL1
CFA-2

– CFB BOARD –

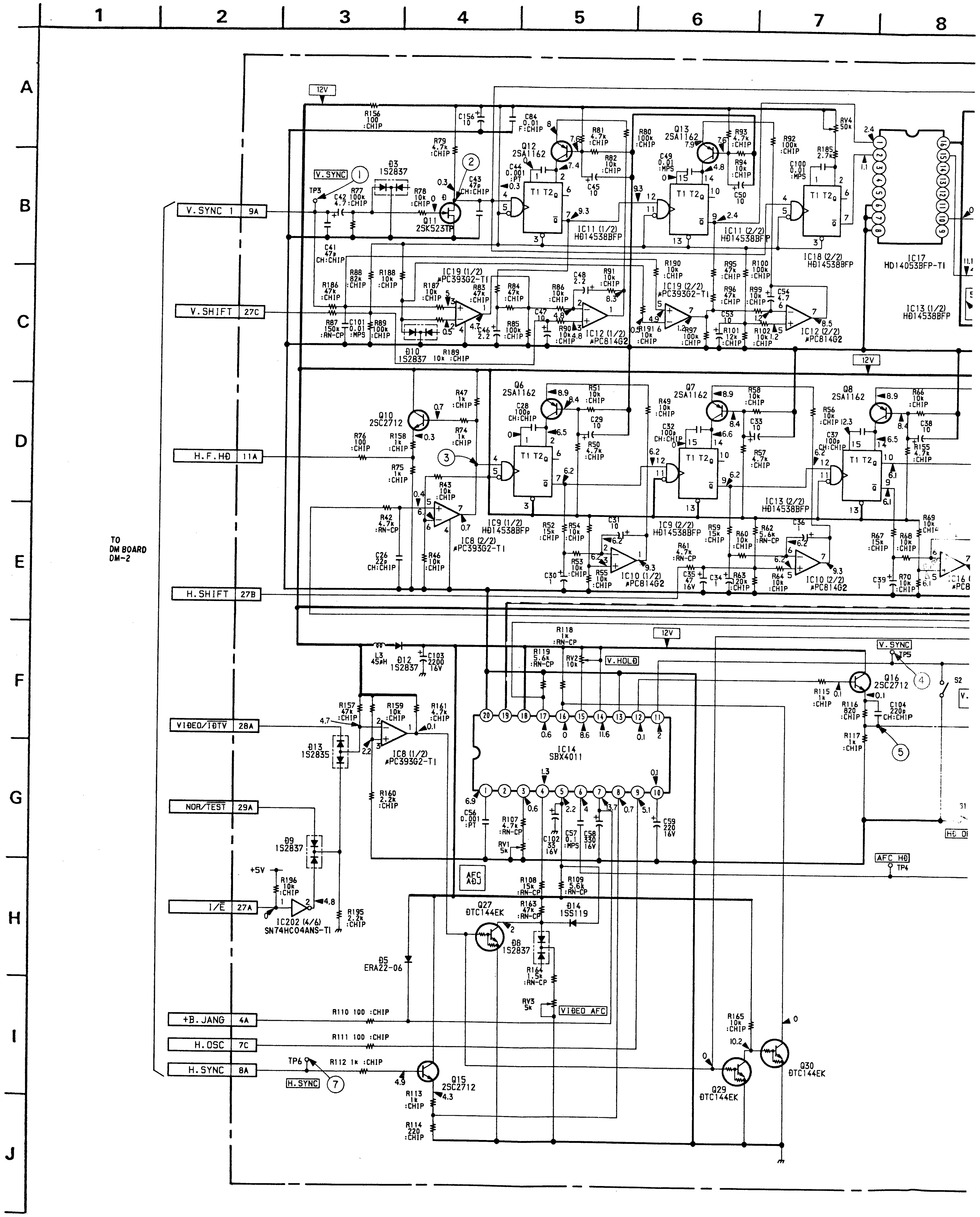

CFB
CAD
1-639-929-11
CFB-4
FL209
FL208
CFB-3
FL210
FL207
FL206
C205
CFB-5.4
FL205
C204
S-C5 H
SONY
FL204
C203
C202
CFB-2
FL203
FL202
FL201
C201
CFB-1
13
1
2

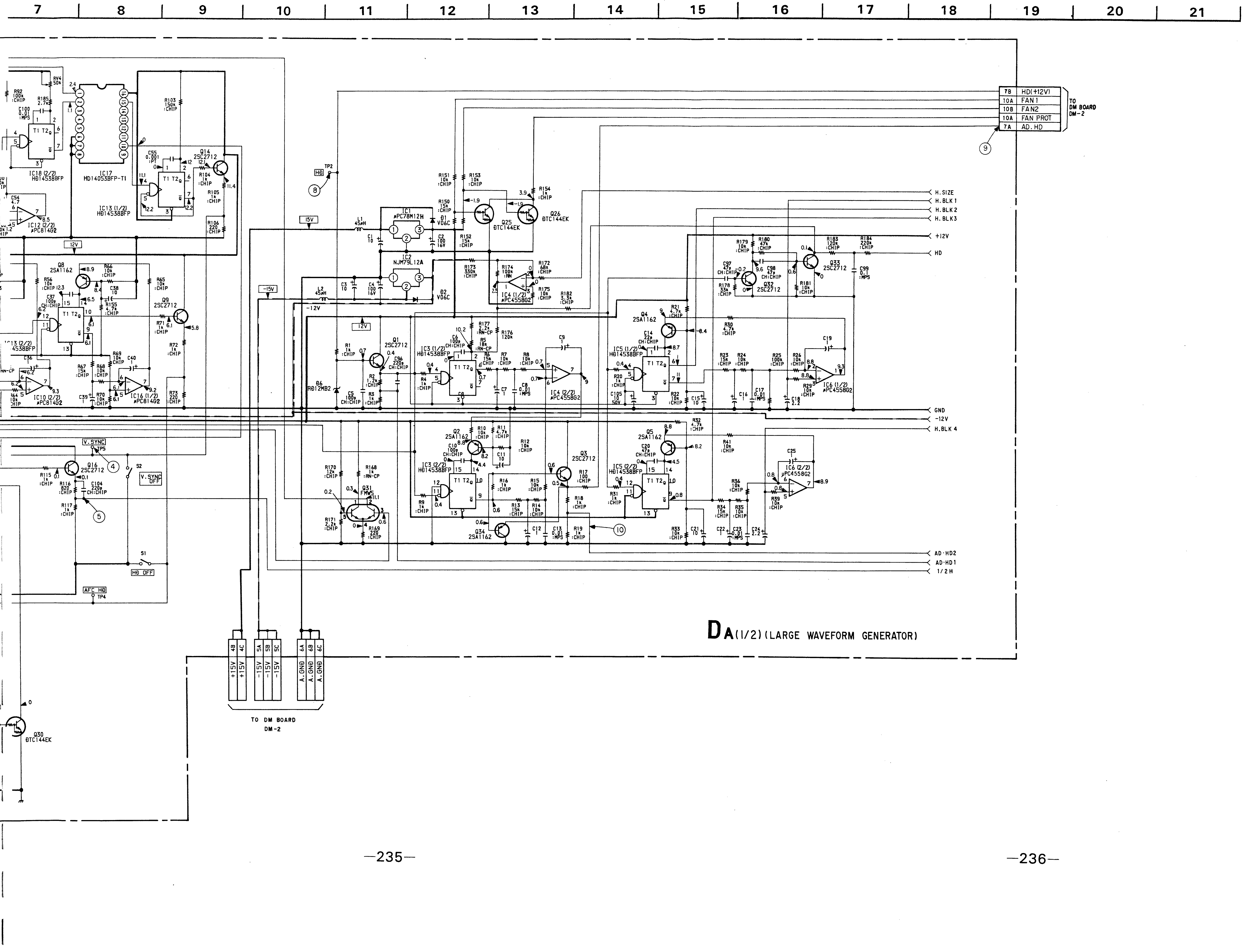
- ░ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

DA BOARD(1/2)



DA (1/2)	IC1	μPC78M12H	+12V REG
	2	NJM79L12A	− 12V REG
	3(1/2)	HD14538BFP	AD HD GEN
	3(2/2)	HD14538BFP	AD LEVEL COMP
	4	μPC4558G2	AD-HD LEVEL COMP
	5	HD14538BFP	H BLK GEN
	6	μPC4558G2	H BLK LEVEL COMP
	8	μPC393G2-T1	SW
	9	HD14538BFP	AFC HD GEN
	10	μPC814G2	AFC HD LEVEL COMP
	11	HD14538BFP	V SHIFT GEN
	12	μPC814G2	V SHIFT LEVEL COMP
	13	HD14538BFP	PULSE GEN
	14	SBX4011-01	JUNGLE
	17	HD14053BFP-T1	V SYNC SW
	18	HD14538BFP	PULSE GEN
	19	μPC393G2-T1	V SHIFT BIAS
	202	SN74HC04NS	PULSE INV.
	Q1	2SC2712	HD BUFF
	2	2SA1162	AD-HD BIAS
	3	2SC2712	AD-HD BUFF
	4	2SA1162	H BLK BIAS
	5	2SA1162	H BLK BIAS
	6	2SA1162	H SHIFT BIAS
	7	2SA1162	H SHIFT BIAS
	8	2SA1162	H SHIFT BIAS
	9	2SC2712	AFC HD GEN
	10	2SC2712	H, F HD BUFF
	11	2SK523TP	V SYNC SW
	12	2SA1162	V SHIFT BIAS
	13	2SA1162	V SHIFT BIAS
	14	2SC2714	V SYNC BUFF
	15	2SC2712	H SYNC BUFF
	16	2SC2712	VD BUFF
	25	DTC144EK	FAN PROT
	26	DTC144EK	FAN PROT
	27	DTC144EK	VIDEO AFC SW
	29	DTC144EK	VIDEO AFC SW
	30	DTC144EK	VIDEO AFC SW
	31	FMW1	SIZE MULTIPLEX
	32	2SC2712	HD BUFF
	33	2SC2712	HD BUFF
	34	2SA1162	AD-HD BUFF
	D1	V06C	+12V REG PROT
	3	1S2837	V SYNC CLAMP
	5	ERA22-06	AFC PROT
	6	RD12MB2	H PULSE CLAMP
	8	1S2837	THERM CANCEL
	9	1S2837	GATE
	10	1S2837	V SYNC CLAMP
	12	1S2837	THERM CANCEL
	13	1S2835	
	14	1SS119	


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
TO DM BOARD DM-2
V.SYNC 1 9A
V.SHIFT 27C
H.F.HD 11A
H.SHIFT 27B
VIDEO/TETV 28A
NOR/TEST 29A
I/E 27A
+B.JANG 4A
H.OSC 7C
H.SYNC 8A
12V
V.SYNC
TP3
TP5
TP4
TP6
H.SYNC
V.HOLD
AFC ADJ
VIDEO AFC
AFC HD
IC11 (1/2) HD14538BFP
IC11 (2/2) HD14538BFP
IC18 (2/2) HD14538BFP
IC17 HD14053BFP-T1
IC13 (1/2) HD14538BFP
IC19 (1/2) μPC393G2-T1
IC19 (2/2) μPC393G2-T1
IC12 (1/2) μPC814G2
IC12 (2/2) μPC814G2
IC9 (1/2) HD14538BFP
IC9 (2/2) HD14538BFP
IC8 (2/2) μPC393G2-T1
IC13 (2/2) HD14538BFP
IC10 (1/2) μPC814G2
IC10 (2/2) μPC814G2
IC8 (1/2) μPC393G2-T1
IC14 SBX4011
IC202 (4/6) SN74HC04ANS-T1
Q11 2SK523TP
Q12 2SA1162
Q13 2SA1162
Q10 2SC2712
Q6 2SA1162
Q7 2SA1162
Q8 2SA1162
Q16 2SC2712
Q27 DTC144EK
Q15 2SC2712
Q29 DTC144EK
Q30 DTC144EK
D3 1S2837
D10 1S2837
D12 1S2837
D13 1S2835
D9 1S2837
D5 ERA22-06
D8 1S2837
D14 1SS119
L3 45μH
RV1 5k
RV2 10k
RV3 5k
RV4 50k
S2


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
7B HD(+12V)
10A FAN1
10B FAN2
10A FAN PROT
7A AD.HD
TO DM BOARD DM-2
H.SIZE
H.BLK1
H.BLK2
H.BLK3
+12V
HD
GND
-12V
H.BLK 4
AD·HD2
AD·HD1
1/2H
HD
TP2
15V
-15V
-12V
12V
IC1 μPC78M12H
IC2 NJM79L12A
D1 V06C
D2 V06C
D6 RD12MB2
Q25 DTC144EK
Q26 DTC144EK
Q1 2SC2712
Q2 2SA1162
Q3 2SC2712
Q4 2SA1162
Q5 2SA1162
Q8 2SA1162
Q9 2SC2712
Q14 2SC2712
Q16 2SC2712
Q30 DTC144EK
Q31 FMW5
Q32 2SC2712
Q33 2SC2712
Q34 2SA1162
IC3 (1/2) HD14538BFP
IC3 (2/2) HD14538BFP
IC4 (1/2) μPC4558G2
IC4 (2/2) μPC4558G2
IC5 (1/2) HD14538BFP
IC5 (2/2) HD14538BFP
IC6 (1/2) μPC4558G2
IC6 (2/2) μPC4558G2
IC10 (2/2) μPC81402
IC12 (2/2) μPC81402
IC13 (1/2) HD14538BFP
IC13 (2/2) HD14538BFP
IC16 (1/2) μPC81402
IC17 HD14053BFP-T1
IC18 (2/2) HD14538BFP
V.SYNC
TP5
V.SYNC OFF
S2
S1
HD OFF
AFC HD
TP4
4B
4C
5A
5B
5C
6A
6B
6C
+15V
+15V
-15V
-15V
-15V
A.GND
A.GND
A.GND
TO DM BOARD DM-2
⑧
⑨
④
⑤
⑩

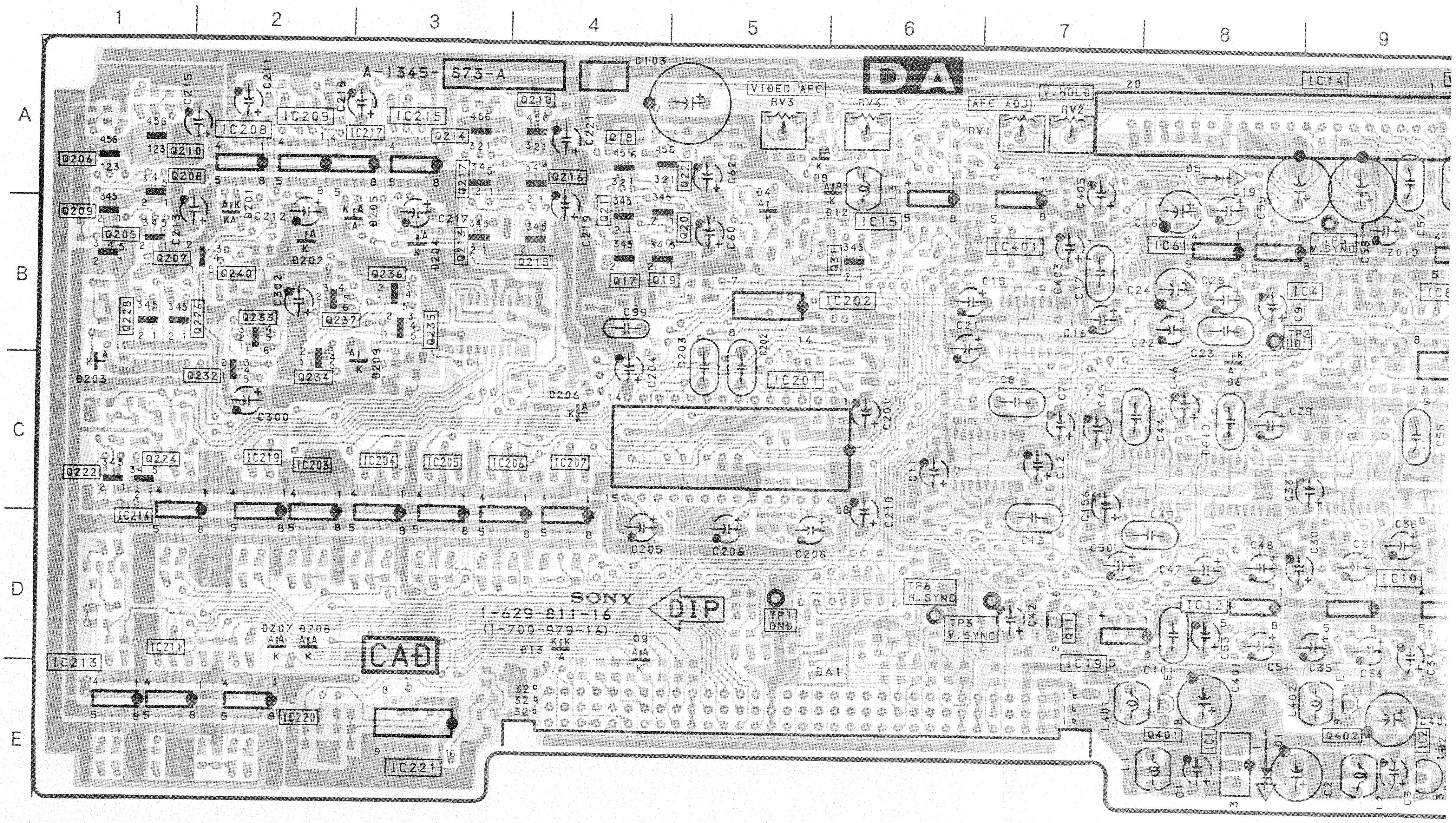
DA(1/2) (LARGE WAVEFORM GENERATOR)

DA [LARGE WAVEFORM GENERATOR]

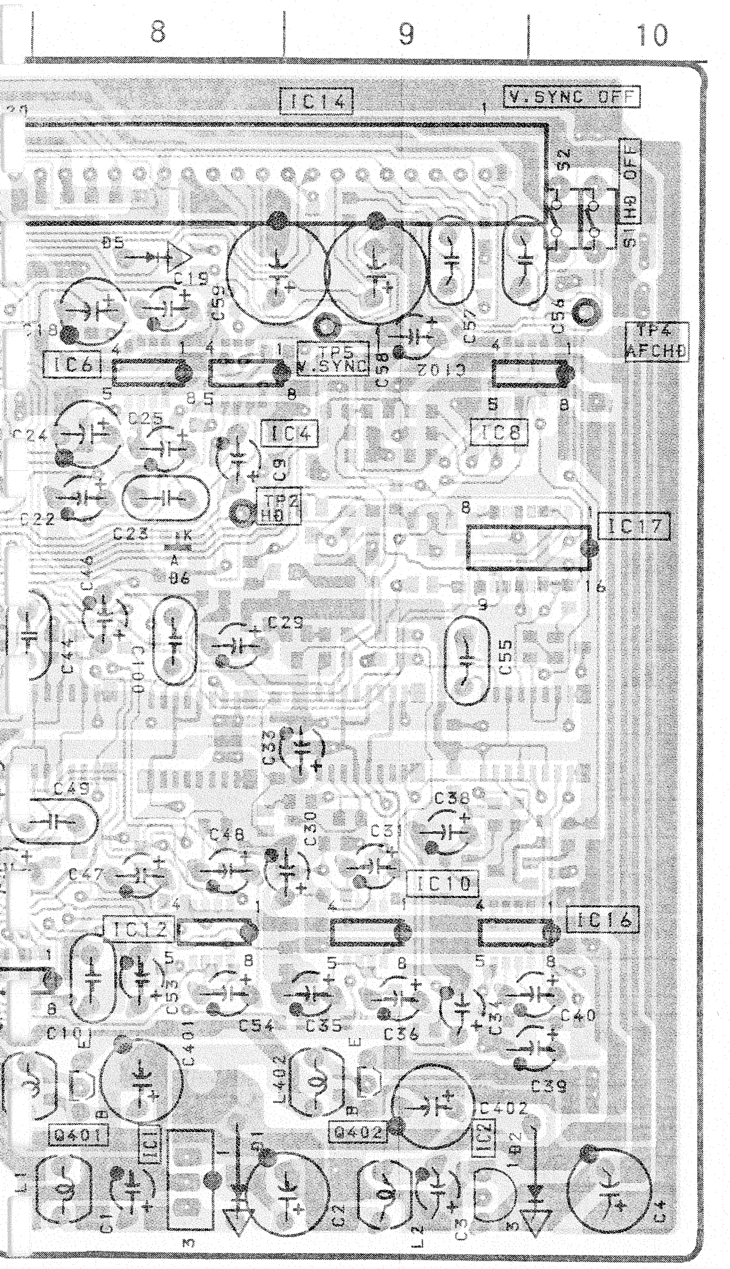
DA BOARD
(COMPONENT SIDE)

IC	
IC1	E-8
IC2	E-9
IC4	B-8
IC6	B-8
IC8	B-10
IC10	D-9
IC12	D-8
IC14	A-8
IC15	A-6
IC16	D-9
IC17	B-10
IC19	D-7
IC201	C-5
IC202	B-5
IC203	C-2
IC204	C-3
IC205	C-3
IC206	C-4
IC207	C-4
IC208	A-2
IC209	A-2
IC211	E-1
IC213	E-1
IC214	C-1
IC215	A-3
IC217	A-2
IC219	C-1
IC220	E-2
IC221	E-3
IC401	B-7
TRANSISTOR	
Q11	D-7
Q17	B-4
Q18	A-4
Q19	B-4
Q20	A-5
Q21	B-4
Q22	A-5
Q31	B-6
Q206	A-1
Q207	B-1
Q208	A-1
Q209	B-1
Q210	A-1
Q213	B-3
Q214	A-3
Q215	B-4
Q216	A-4
Q217	A-3
Q218	A-4
Q222	C-1
Q224	C-1
Q226	B-1
Q228	B-4
Q232	C-2
Q233	B-2
Q234	C-2
Q235	B-3
Q236	B-3
Q238	C-1
Q401	E-8
Q402	E-9
DIODE	
D1	E-8
D2	E-9
D4	A-5
D5	A-8
D6	C-8
D8	A-5
D9	D-4
D12	A-6
D13	D-4
D201	B-2
D202	B-2
D203	C-1
D204	B-3
D205	B-3
D206	C-4
D207	D-2
D208	D-2
D209	C-3
VARIABLE RESISTOR	
RV1	A-7
RV2	A-7
RV3	A-5
RV4	A-6

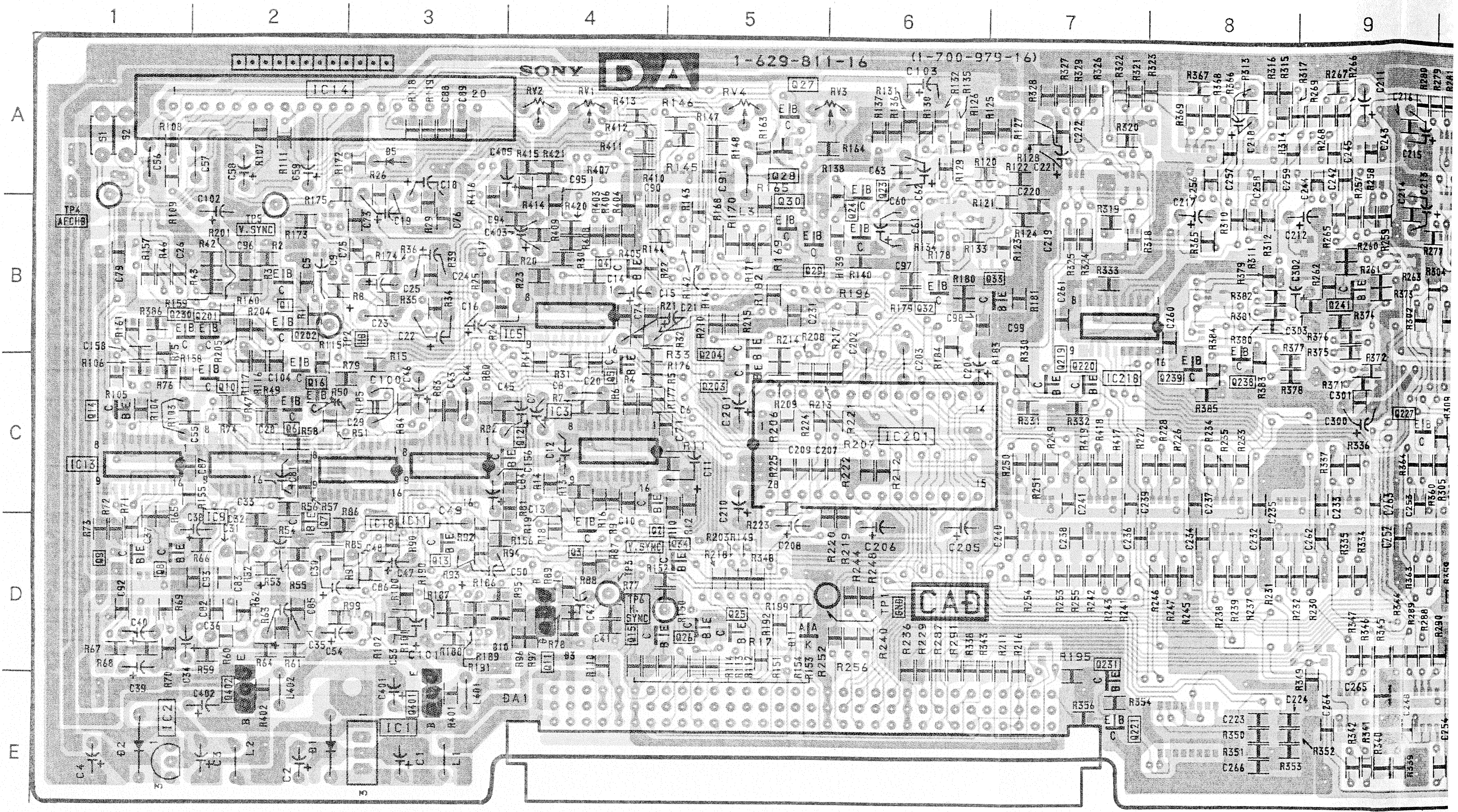
– DA BOARD –
(COMPONENT SIDE)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
DA
A-1345-873-A
VIDEO.AFC
RV3
RV4
AFC ADJ
RV1
V.HOLD
RV2
IC14
IC208
IC209
IC217
IC215
Q206
Q209
Q210
Q208
Q205
Q207
Q240
Q214
Q218
Q216
Q215
Q18
Q17
Q19
Q20
Q21
Q22
Q31
IC15
IC401
IC6
IC4
TP5 V.SYNC
TP2 HD
IC202
IC201
Q228
Q226
Q233
Q237
Q236
Q235
Q232
Q234
C300
C302
C99
C103
Q222
Q224
IC214
IC219
IC203
IC204
IC205
IC206
IC207
C205
C206
C208
C210
C201
IC10
IC12
IC19
TP6 H.SYNC
TP3 V.SYNC
TP1 GND
SONY
1-629-811-16
(1-700-979-16)
DIP
CAD
IC213
IC211
IC220
IC221
DA1
Q401
Q402
IC1
IC2
L401
L402
C401
C402

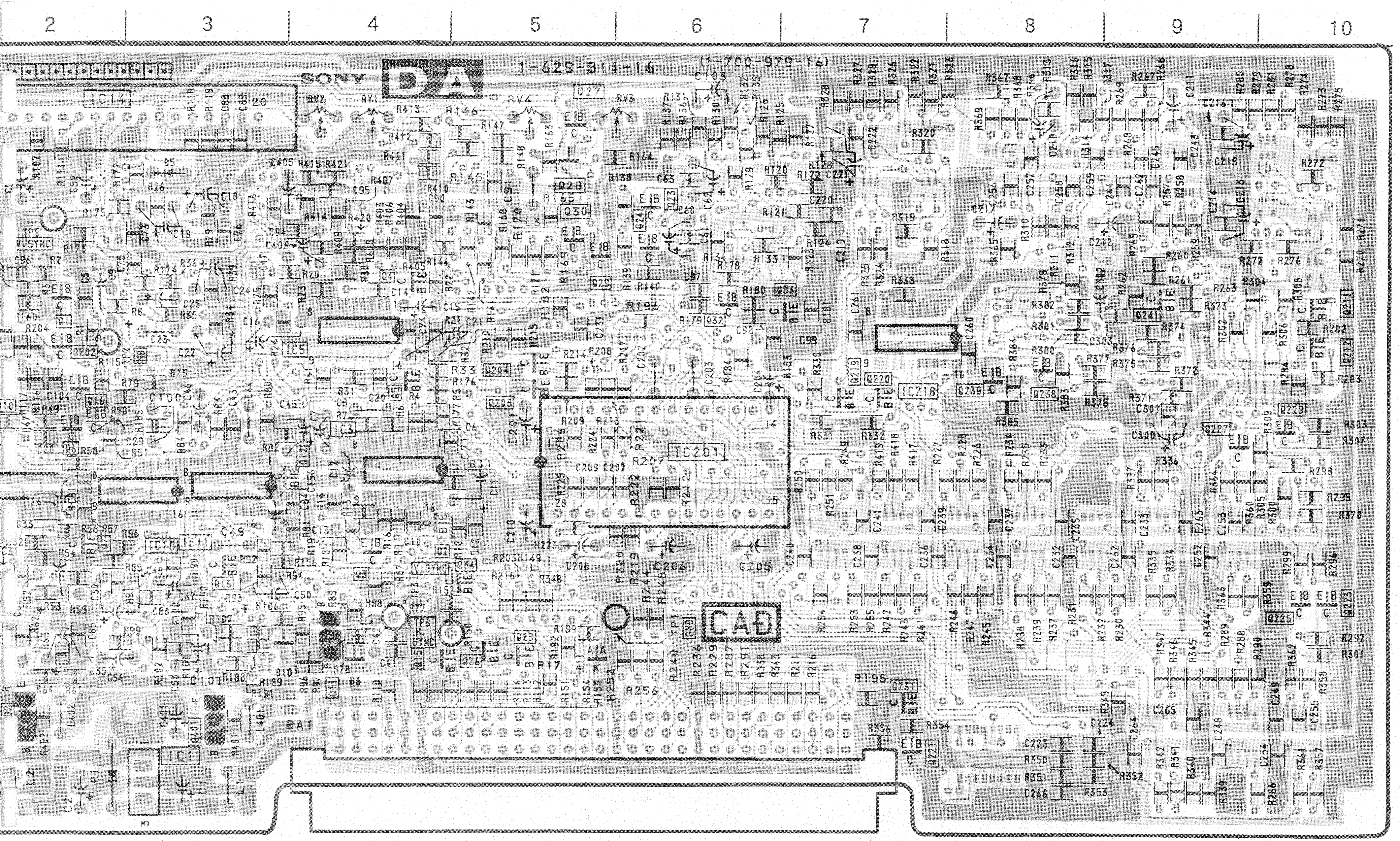
ATOR]


8
9
10
IC14
V.SYNC OFF
S2
S1 HD OFF
TP4 AFCHD
TP5 V.SYNC
TP2 HD
IC6
IC4
IC8
IC17
IC10
IC12
IC16
Q401
Q402
IC1
IC2

– **DA BOARD** –
(CONDUCTOR SIDE)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
SONY
DA
1-629-811-16
(1-700-979-16)
IC14
IC13
IC3
IC5
IC201
IC218
IC18
IC11
TP4 AFCHD
TP5 V.SYNC
TP6 H.SYNC
V.SYNC
RV1
RV2
RV3
RV4
CAD
DA1
GND

- ▨ : Pattern from the side which en
- ▨ : Pattern of the rear side.


2
3
4
5
6
7
8
9
10
SONY DA
1-629-811-16
(1-700-979-16)
IC14
IC201
IC218
IC5
IC3
IC18
IC11
IC1
CAD
DA1

- ░ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

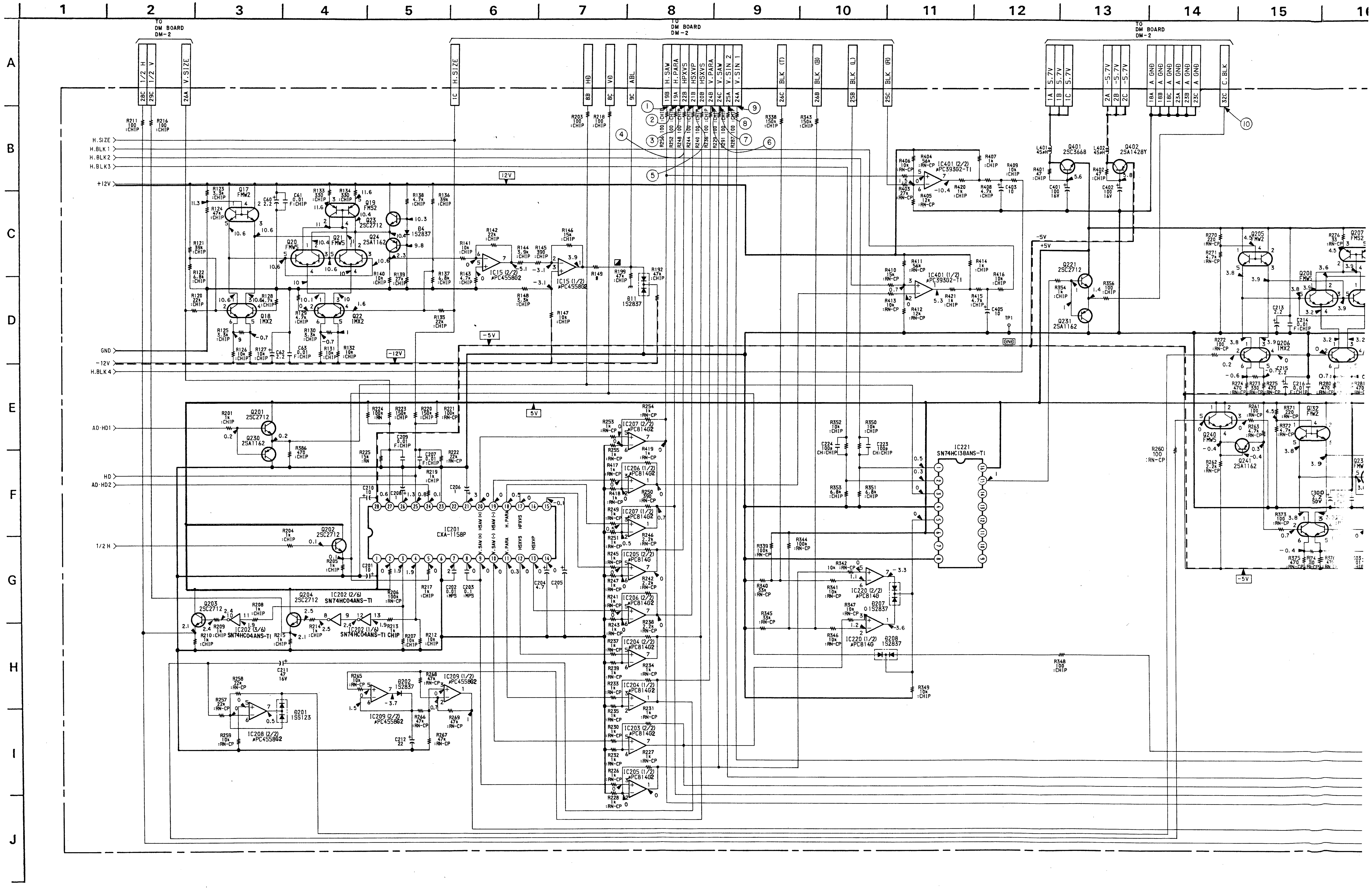
DA BOARD
(CONDUCTOR SIDE)

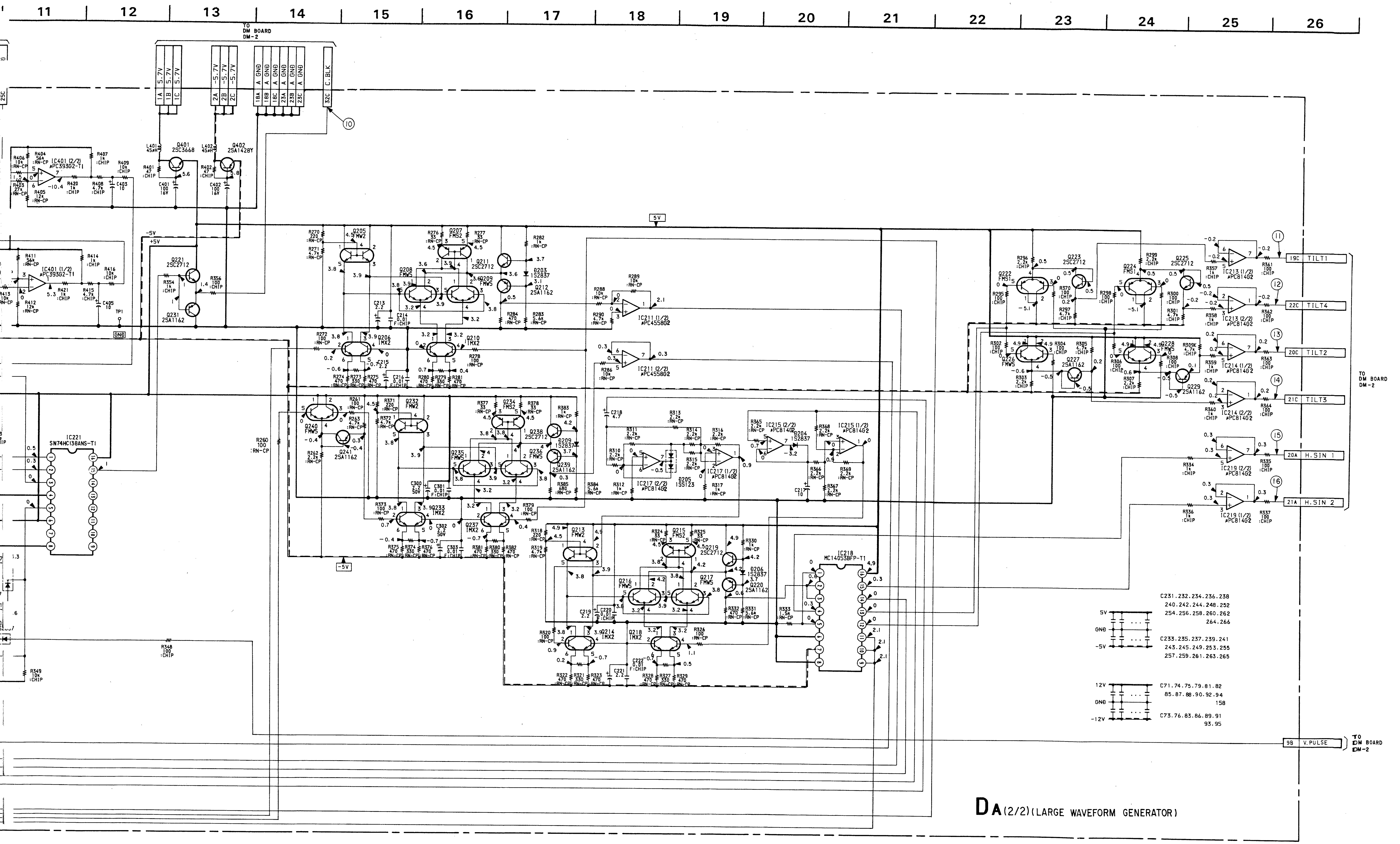
IC	
IC1	E-3
IC2	E-1
IC3	C-4
IC5	B-4
IC9	C-2
IC11	C-3
IC13	C-1
IC14	A-2
IC18	C-3
IC201	C-6
IC218	B-7

TRANSISTOR	
Q1	B-2
Q2	D-4
Q3	D-4
Q4	B-4
Q5	C-4
Q6	C-2
Q7	D-2
Q8	D-1
Q9	D-1
Q10	C-2
Q11	D-4
Q12	C-4
Q13	D-3
Q14	C-1
Q15	D-4
Q16	C-2
Q23	A-6
Q24	B-6
Q25	D-5
Q26	D-5
Q27	A-5
Q28	A-5
Q29	B-5
Q30	B-5
Q32	B-6
Q33	B-7
Q34	D-5
Q201	B-2
Q202	B-2
Q203	C-5
Q204	B-5
Q211	B-10
Q212	B-10
Q219	C-7
Q220	C-7
Q221	E-7
Q223	D-10
Q225	D-10
Q227	C-9
Q229	C-10
Q230	B-1
Q231	D-7
Q238	B-8
Q239	C-8
Q241	B-9
Q401	E-3
Q402	E-2

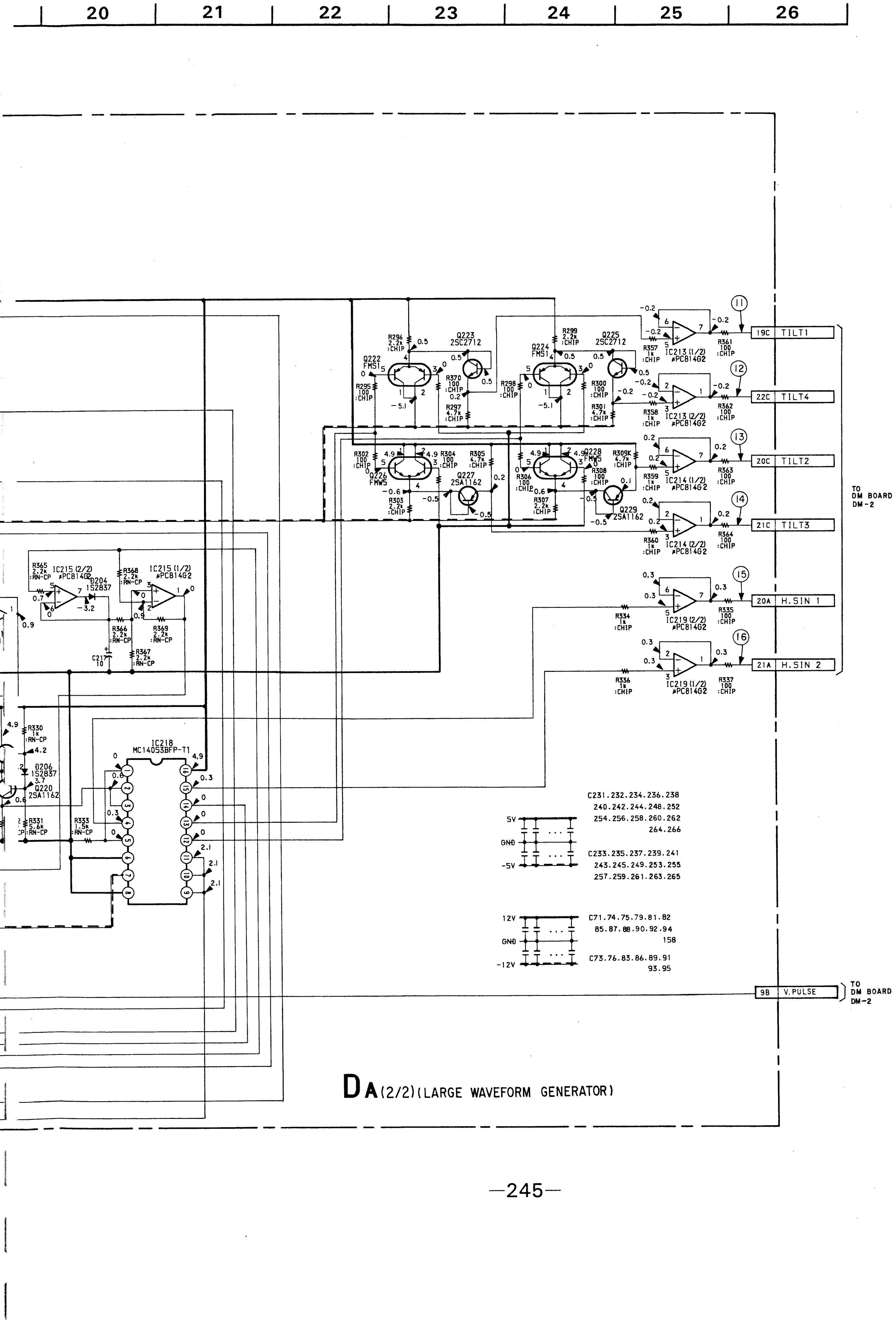
DIODE	
D1	E-2
D2	E-1
D3	D-4
D5	A-3
D10	D-4

VARIABLE RESISTOR	
RV1	A-4
RV2	A-4
RV3	A-6
RV4	A-5


TO DM BOARD DM-2
1/2 H
1/2 V
V.SIZE
H.SIZE
HD
VD
ABL
H.SAW
H.PARA
HPXVS
HSXVP
HSXVS
V.PARA
V.SAW
V.SIN 2
V.SIN 1
BLK (T)
BLK (B)
BLK (L)
BLK (R)
5.7V
-5.7V
A GND
C.BLK
H.SIZE
H.BLK 1
H.BLK 2
H.BLK 3
+12V
GND
-12V
H.BLK 4
AD-HD1
HD
AD-HD2
1/2 H
12V
-5V
-12V
5V
GND
TP1
IC15 (2/2) μPC4558G2
IC15 (1/2) μPC4558G2
IC401 (2/2) μPC393G2-T1
IC401 (1/2) μPC393G2-T1
IC201 CXA-1158P
IC202 (2/6) SN74HC04ANS-T1
IC202 (3/6) SN74HC04ANS-T1
IC202 (1/6) SN74HC04ANS-T1
IC221 SN74HC138ANS-T1
IC220 (2/2) μPC814G
IC220 (1/2) μPC814G
IC207 (2/2) μPC814G2
IC206 (1/2) μPC814G2
IC207 (1/2) μPC814G2
IC205 (2/2) μPC814G
IC206 (2/2) μPC814G2
IC204 (2/2) μPC814G2
IC204 (1/2) μPC814G2
IC203 (2/2) μPC814G2
IC205 (1/2) μPC814G2
IC208 (2/2) μPC4558G2
IC209 (2/2) μPC4558G2
IC209 (1/2) μPC4558G2
Q17 FMW2
Q19 FMS2
Q23 2SC2712
Q24 2SA1162
Q20 FMW5
Q21 FMW5
Q18 IMX2
Q22 IMX2
D4 1S2837
D11 1S2837
Q201 2SC2712
Q230 2SA1162
Q202 2SC2712
Q203 2SC2712
Q204 2SC2712
D201 1SS123
D202 1S2837
D207 1S2837
D208 1S2837
Q401 2SC3668
Q402 2SA1428Y
L401 45μH
L402 45μH
Q221 2SC2712
Q231 2SA1162
Q205 FMW2
Q207 FMS2
Q208 FMW5
Q206 IMX2
Q240 FMW5
Q241 2SA1162
Q132 FMW2

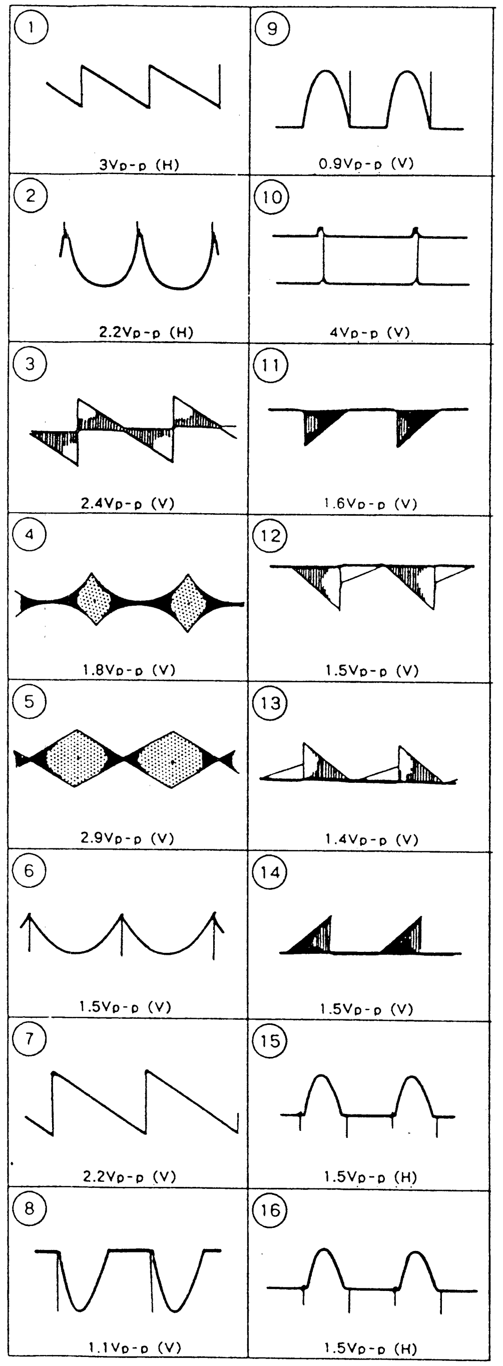

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
TO DM BOARD DM-2
1A 5.7V
1B 5.7V
1C 5.7V
2A -5.7V
2B -5.7V
2C -5.7V
18A A GND
18B A GND
18C A GND
23A A GND
23B A GND
23C A GND
32C C.BLK
⑩
Q401 2SC3668
Q402 2SA1428Y
L401 45μH
L402 45μH
IC401 (2/2) μPC393G2-T1
IC401 (1/2) μPC393G2-T1
Q221 2SC2712
Q231 2SA1162
IC221 SN74HC138ANS-T1
5V
-5V
+5V
GND
TP1
Q205 FMW2
Q207 FMS2
Q208 FMW5
Q209 FMW5
Q211 2SC2712
Q212 2SA1162
D203 1S2837
Q206 IMX2
Q210 IMX2
IC211 (1/2) μPC4558G2
IC211 (2/2) μPC4558G2
Q240 FMW5
Q241 2SA1162
Q232 FMW2
Q234 FMS2
Q235 FMW5
Q236 FMW5
Q238 2SC2712
D209 1S2837
Q239 2SA1162
Q233 IMX2
Q237 IMX2
IC217 (2/2) μPC814G2
IC217 (1/2) μPC814G2
D205 1SS123
IC215 (2/2) μPC814G2
IC215 (1/2) μPC814G2
D204 1S2837
Q213 FMW2
Q215 FMS2
Q219 2SC2712
D206 1S2837
Q220 2SA1162
Q216 FMW5
Q217 FMW5
Q214 IMX2
Q218 IMX2
IC218 MC14053BFP-T1
Q222 FMS15
Q223 2SC2712
Q224 FMS14
Q225 2SC2712
Q226 FMW5
Q227 2SA1162
Q228 FMW5
Q229 2SA1162
IC213 (1/2) μPC814G2
IC213 (2/2) μPC814G2
IC214 (1/2) μPC814G2
IC214 (2/2) μPC814G2
IC219 (2/2) μPC814G2
IC219 (1/2) μPC814G2
⑪ 19C TILT1
⑫ 22C TILT4
⑬ 20C TILT2
⑭ 21C TILT3
⑮ 20A H.SIN 1
⑯ 21A H.SIN 2
TO DM BOARD DM-2
9B V.PULSE
TO DM BOARD DM-2
C231.232.234.236.238 240.242.244.248.252 254.256.258.260.262 264.266
C233.235.237.239.241 243.245.249.253.255 257.259.261.263.265
5V
GND
-5V
12V
GND
-12V
C71.74.75.79.81.82 85.87.88.90.92.94 158
C73.76.83.86.89.91 93.95

DA(2/2)(LARGE WAVEFORM GENERATOR)

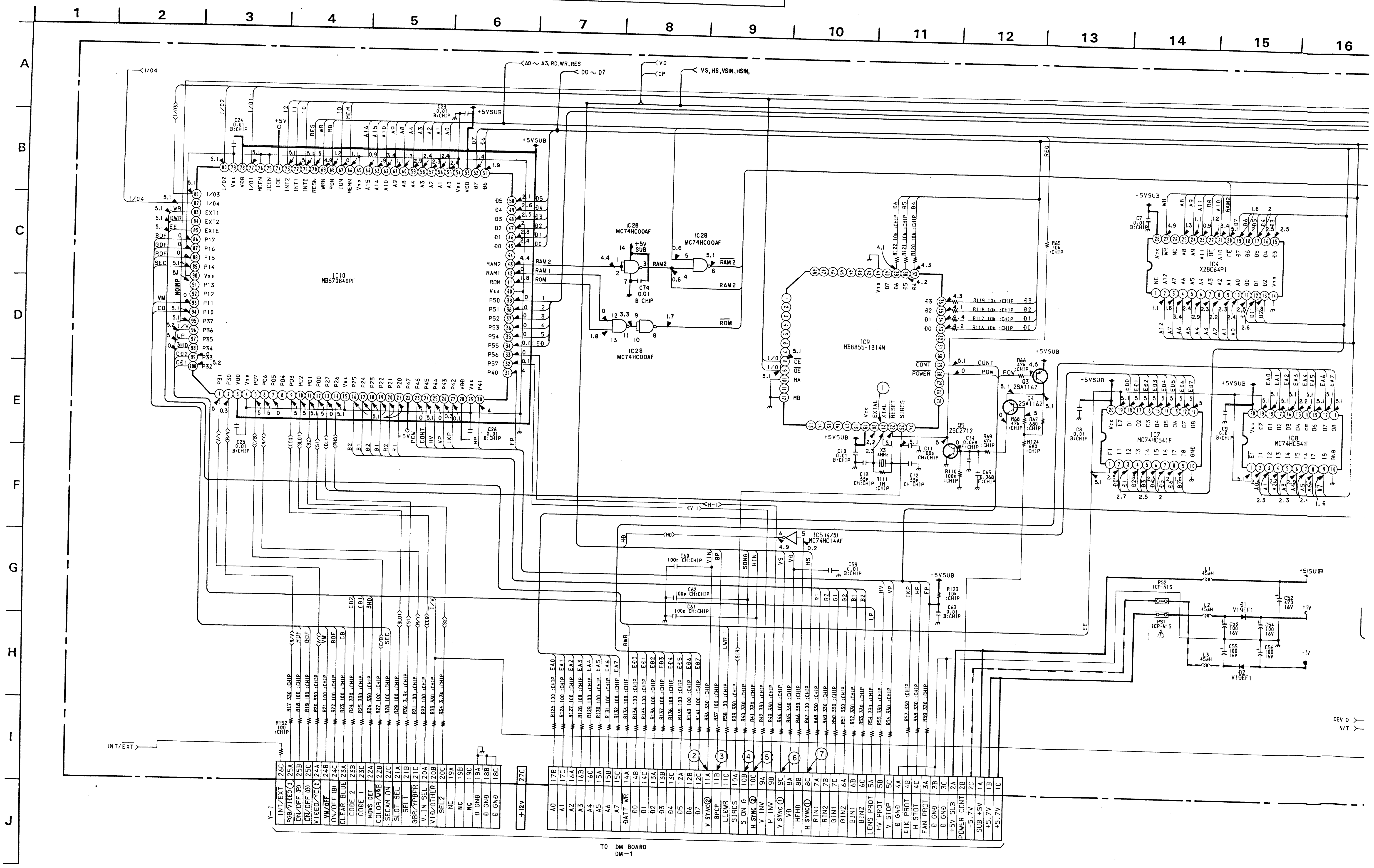

20
21
22
23
24
25
26
Q222 FMS1
Q223 2SC2712
Q224 FMS1
Q225 2SC2712
Q226 FMW5
Q227 2SA1162
Q228 FMW5
Q229 2SA1162
IC213 (1/2) μPC814G2
IC213 (2/2) μPC814G2
IC214 (1/2) μPC814G2
IC214 (2/2) μPC814G2
IC219 (2/2) μPC814G2
IC219 (1/2) μPC814G2
IC215 (2/2) μPC814G2
IC215 (1/2) μPC814G2
D204 1S2837
D206 1S2837
Q220 2SA1162
IC218 MC14053BFP-T1
19C TILT1
22C TILT4
20C TILT2
21C TILT3
20A H.SIN 1
21A H.SIN 2
TO DM BOARD DM-2
9B V.PULSE
TO DM BOARD DM-2
C231.232.234.236.238 240.242.244.248.252 254.256.258.260.262 264.266
C233.235.237.239.241 243.245.249.253.255 257.259.261.263.265
C71.74.75.79.81.82 85.87.88.90.92.94 158
C73.76.83.86.89.91 93.95
5V
GND
-5V
12V
GND
-12V

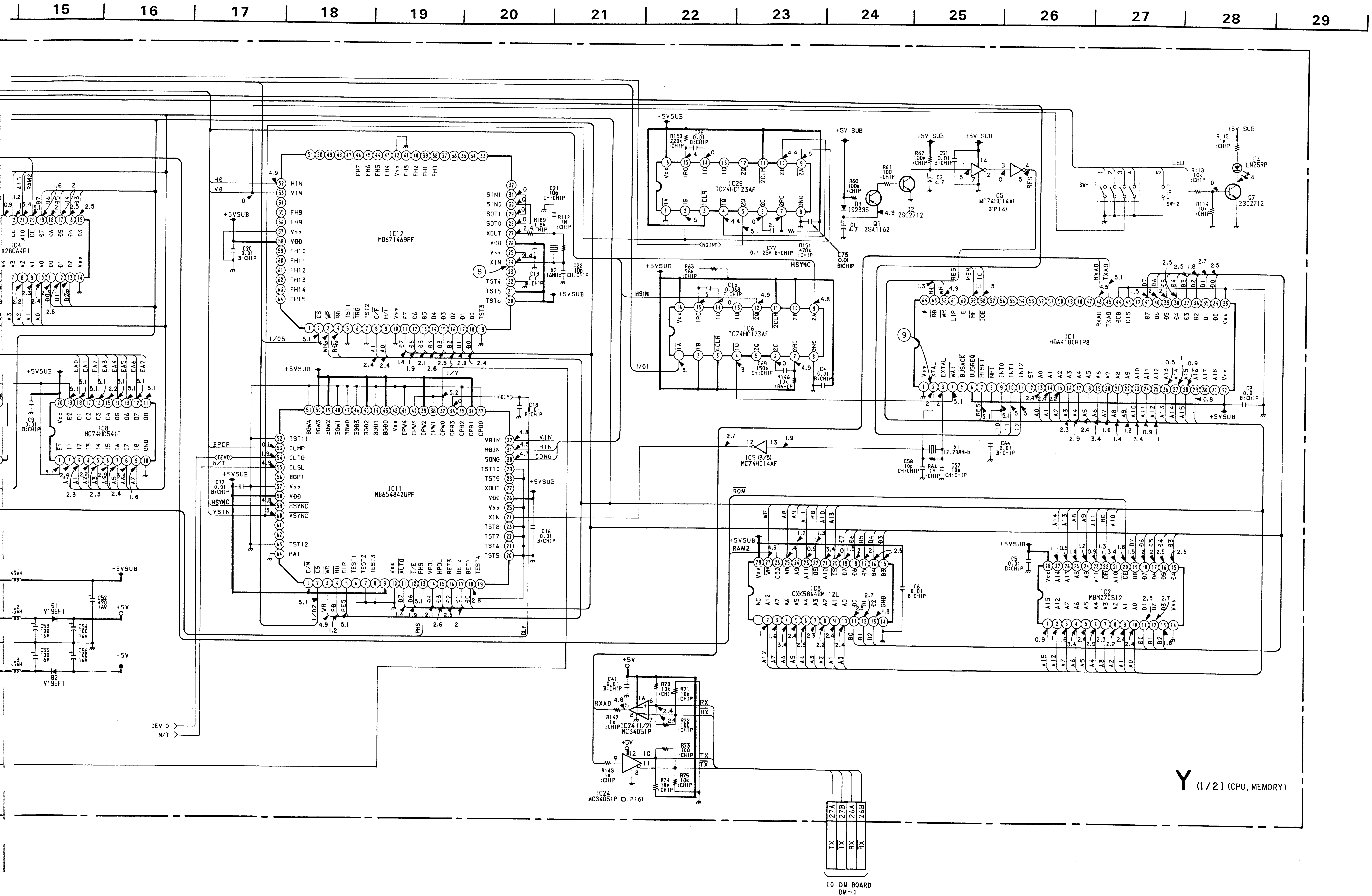
DA(2/2)(LARGE WAVEFORM GENERATOR)

DA BOARD(2/2)

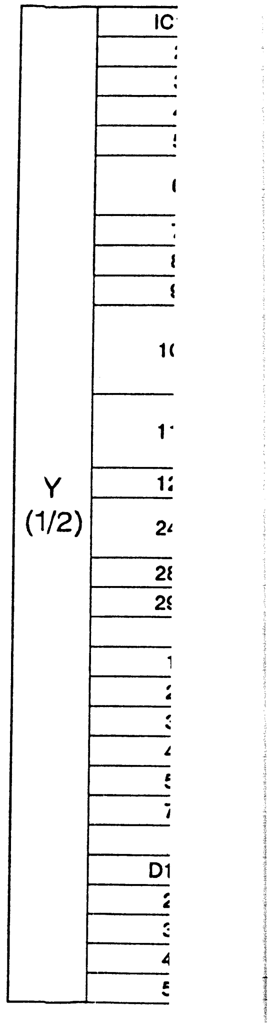


DA (2/2)	IC15	μPC4558G2	LEVEL SHIFT	214	IMX2	H SIN MULTIPLEX
	201	CXA-1158P	REG 1 WAVE GEN	215	FMS2	H SIN MULTIPLEX
	202	SN74HC04NS	PULSE INV	216	FMW1	H SIN MULTIPLEX
	203	μPC814G2	REG 1 WAVE BUFF	217	FMW1	H SIN MULTIPLEX
	204	μPC814G2	REG 1 WAVE BUFF	218	IMX2	H SIN MULTIPLEX
	205	μPC814G2	REG 1 WAVE BUFF	219	2SC2712	H SIN MULTIPLEX
	206	μPC814G2	REG 1 WAVE BUFF	220	2SA1162	H SIN MULTIPLEX
	207	μPC814G2	REG 1 WAVE BUFF	221	2SC2712	BLK BUFF
	208	μPC4558G2	V SAW RECT	222	FMS1	TILT SW
	209	μPC4558G2	V PARA BIAS	223	2SC2712	TILT SW
	211	μPC4558G2	V SIN BUFF	224	FMS1	TILT SW
	213	μPC814G2	TILT BUFF	225	2SC2712	TILT SW
	214	μPC814G2	TILT BUFF	226	FMW1	TILT SW
	215	μPC814G2	H PARA BIAS	227	2SA1162	TILT SW
	217	μPC814G2	H SAW RECT	228	FMW1	TILT SW
	218	HD14053BFP	H SIN DEVIDER	229	2SA1162	TILT SW
	219	μPC814G2	H SIN BUFF	230	2SA1162	HD BUFF
	401	μPC393G2-T1	H BLK LEVEL DET	231	2SA1162	BLK BUFF
				232	FMW2	V SIN MULTIPLEX
	Q17	FMW2	SIZE MULTIPLEX	233	IMX2	V SIN MULTIPLEX
	18	IMX2	SIZE MULTIPLEX	234	FMS2	V SIN MULTIPLEX
	19	FMS2	SIZE LUMTIPLEX	235	FMW1	V SIN MULTIPLEX
	20	FMW1	SIZE LUMTIPLEX	236	FMW1	V SIN MULTIPLEX
	21	FMW1	V STOP PROT	237	IMX2	V SIN MULTIPLEX
	22	IMX2	SIZE LUMTIPLEX	238	2SC2712	V SIN MULTIPLEX
	23	2SC2712	SIZE LUMTIPLEX	239	2SA1162	V SIN MULTIPLEX
	24	2SA1162	SIZE LUMTIPLEX	240	FMW1	V SIN MULTIPLEX
	201	2SC2712	HD BUFF	241	2SA1162	V SIN MULTIPLEX
	202	2SC2712	VD BUFF			
	203	2SC2712	1/2H BUFF	D4	1S2837	BIAS
	204	2SC2712	1/2V BUFF	11	1S2837	
	205	FMW2	V SIN MULTIPLEX	201	1SS123	V SAW CLIP
	206	IMX2	V SIN MULTIPLEX	202	1S2837	V PARA RECT
	207	FMS2	V SIN MULTIPLEX	203	1S2837	BIAS
	208	FMW1	V SIN MULTIPLEX	204	1S2837	H PARA RECT
	209	FMW1	V SIN MULTIPLEX	205	1SS123	H SAW CLIP
	210	IMX2	V SIN MULTIPLEX	206	1S2837	BIAS
	211	2SC2712	V SIN MULTIPLEX	207	1S2837	V SAW CLIP
	212	2SA1162	V SIN MULTIPLEX	208	1S2837	V SAW CLIP
	213	FMW2	H SIN MULTIPLEX			


IC10
MB670840PF
IC28
MC74HC00AF
IC9
MB8855-1314N
IC4
X28C64P1
IC7
MC74HC541F
IC8
MC74HC541F
IC5 (4/5)
MC74HC14AF
Q3
2SA1162
Q4
2SA1162
Q5
2SC2712
X3
4MHz
+5VSUB
A0 ~ A3, RD, WR, RES
D0 ~ D7
VD
CP
VS, HS, VSIN, HSIN,
INT/EXT
DEV 0
N/T
PS1
ICP-N15
PS2
ICP-N15
D1
V19EF1
D2
V19EF1
L1
45μH
L2
45μH
L3
45μH
Y-1
INT/EXT
RGB/VIDEO②
ON/OFF (R)
ON/OFF (G)
VIDEO/YC②
VM/OFF
ON/OFF (B)
CLEAR BLUE
CODE 2
CODE 1
HDVS DET
COLOR/W&B
SECAM ON
SLOT SEL
SEL1
GBR/YPBPR
V.IN SEL
VID/OTHER
SEL2
NC
D GND
+12V
A0
A1
A2
A3
A4
A5
A6
A7
BATT WR
D0
D1
D2
D3
D4
D5
D6
D7
V SYNC②
BPCP
LEDWR
SIRCS
S ON G
H SYNC②
V INV
H INV
V SYNC①
VD
HFHD
H SYNC①
RIN1
GIN1
BIN1
LENS PROT
HV PROT
V STOP
D GND
ΣIK PROT
H STOT
FAN PROT
+5V SUB
POWER CONT
-5.7V
SUB +5V
+5.7V
TO DM BOARD
DM-1

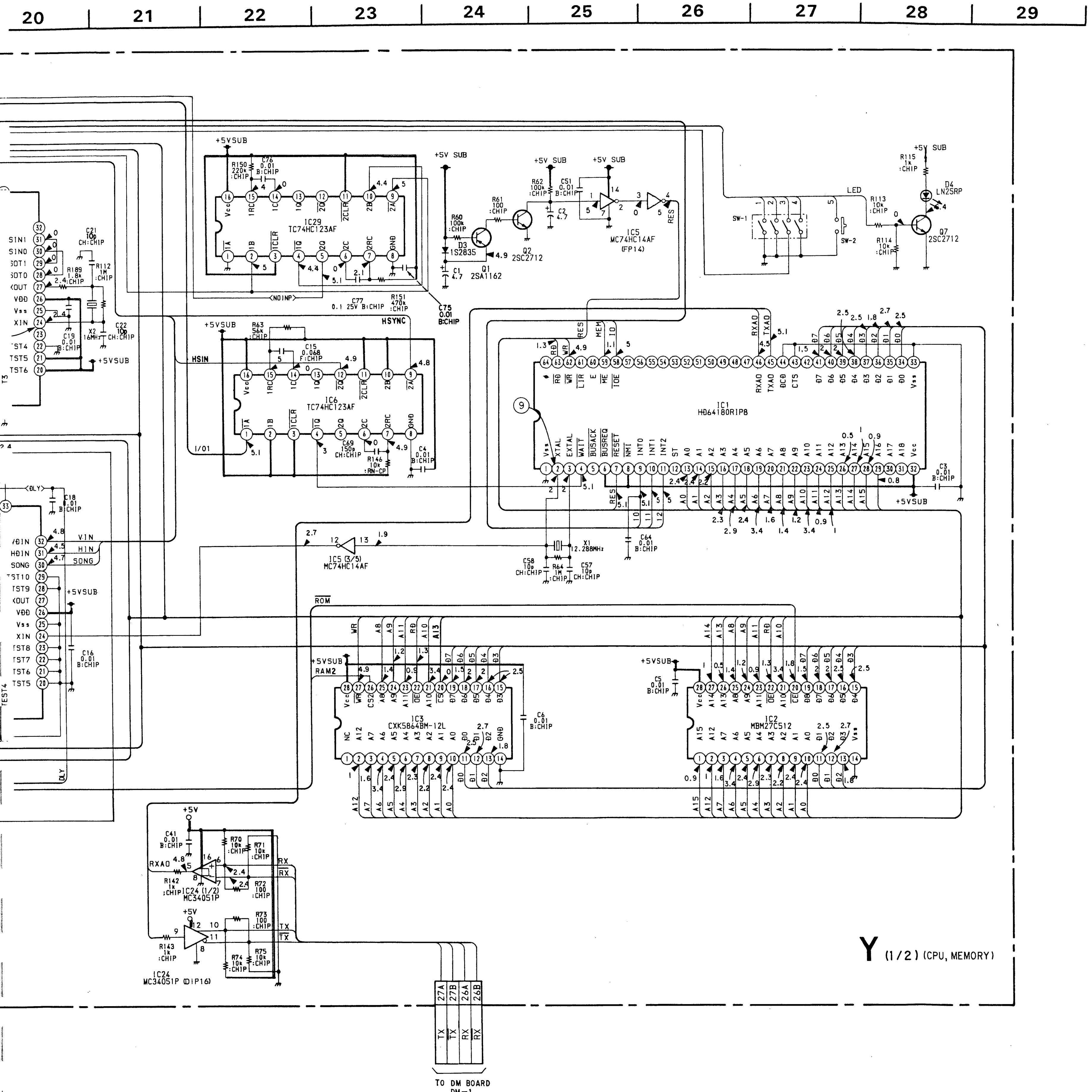

15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
IC4 X28C64P1
IC8 MC74HC541F
IC12 MB671469PF
IC11 MB654842UPF
IC29 TC74HC123AF
IC6 TC74HC123AF
IC1 HD64180R1P8
IC5 MC74HC14AF (FP14)
IC5 (3/5) MC74HC14AF
IC3 CXK5864BM-12L
IC2 MBM27C512
IC24 (1/2) MC34051P
IC24 MC34051P (DIP16)
Q1 2SA1162
Q2 2SC2712
Q7 2SC2712
D3 1S2835
D4 LN25RP
D1 V19EF1
D2 V19EF1
X1 12.288MHz
X2 16MHz
SW-1
SW-2
LED
+5VSUB
+5V
-5V
HSYNC
HSIN
VSIN
BPCP
DEV0
N/T
DEV O
N/T
ROM
RAM2
RXAO
TXAO
RX
TX
RES
(NOINP)
27A
27B
26A
26B
TX
TX
RX
RX
TO DM BOARD
DM-1

Y (1/2) (CPU, MEMORY)


IC

Y
(1/2)

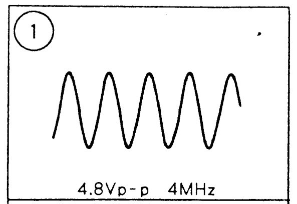
D1

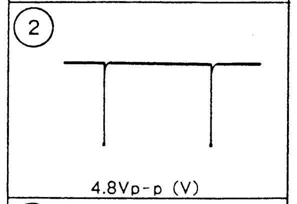

20
21
22
23
24
25
26
27
28
29
+5VSUB
IC29 TC74HC123AF
IC6 TC74HC123AF
HSYNC
HSIN
IC5 MC74HC14AF (FP14)
Q1 2SA1162
Q2 2SC2712
D3 1S2835
RES
SW-1
SW-2
LED
D4 LN25RP
Q7 2SC2712
IC1 HD64180R1P8
X1 12.288MHz
IC5 (3/5) MC74HC14AF
ROM
RAM2
IC3 CXK5864BM-12L
IC2 MBM27C512
IC24 (1/2) MC34051P
IC24 MC34051P (DIP16)
RXAO
TX
RX
27A
27B
26A
26B
TO DM BOARD DM-1

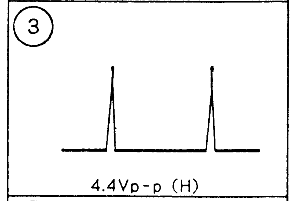
Y (1/2) (CPU, MEMORY)

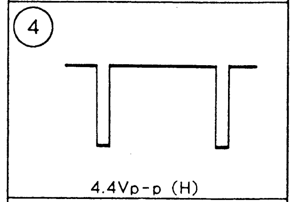
Y (1/2)	IC1	HD64180R1P8	CPU
	2	MBM27C512-20	PROGRAM ROM
	3	CXK5864BM-12L	RAM
	4	X28C64PI	EE PROM.
	5	MC74HC14AF	INVERTER
	6	TC74HC123AF	WAIT CONTROL&REFORM, H-SYNC PULSE
	7	MC74HC541F	DATA BUS BUFFER
	8	MC74HC541F	ADDRESS BUS BUFFER
	9	MB8855-1314N	SIRCS DECODE
	10	MB670840PF	ADDRESS ENCODE/ PARALLEL INTERFACE/ INTERRUPT CONTROL
	11	MB654842UPF	SYNC CONTORL&CLAMP PULSE GEN.
	12	MB671469PF	fH/fV DETECT
	24	MC34051P	RS422 LINE DRIVER/RECIVER
	28	MC74HC00AF	ADDRESS ENCODE
	29	TC74HC123AF	V-SYNC DETECT
	1	2SA1162	RESET PULSE GENERATE
	2	2SC2712	RESET PULSE GENERATE
	3	2SA1162	POWER CONTROL DRIVE
	4	2SA1162	POWER DOWN DETECT
	5	2SC2712	SIRCS IC RESET
	7	2SC2712	LED DRIVE
	D1	V19EF1	VOLTAGE DROP DIODE
	2	V19EF1	VOLTAGE DROP DIODE
	3	1S2835	RECTIFICATION
	4	LN25RP	LED
	5	1S2835	OSC KILL

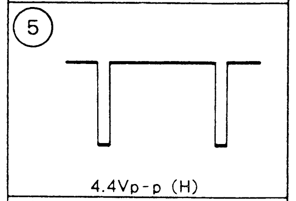
Y BOARD(1/2)

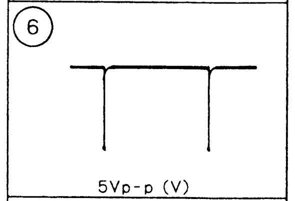
① 
4.8Vp-p 4MHz

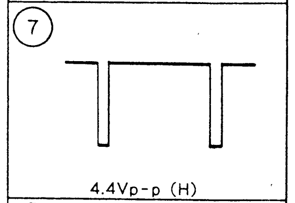
② 
4.8Vp-p (V)

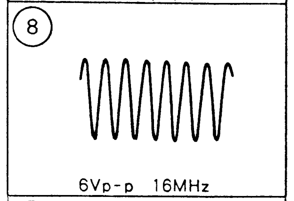
③ 
4.4Vp-p (H)

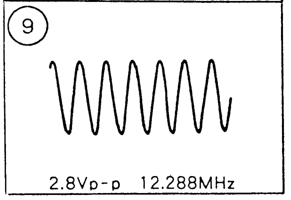
④ 
4.4Vp-p (H)

⑤ 
4.4Vp-p (H)

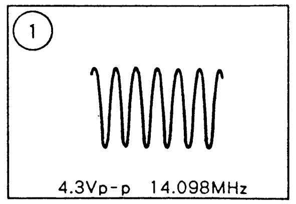
⑥ 
5Vp-p (V)

⑦ 
4.4Vp-p (H)

⑧ 
6Vp-p 16MHz

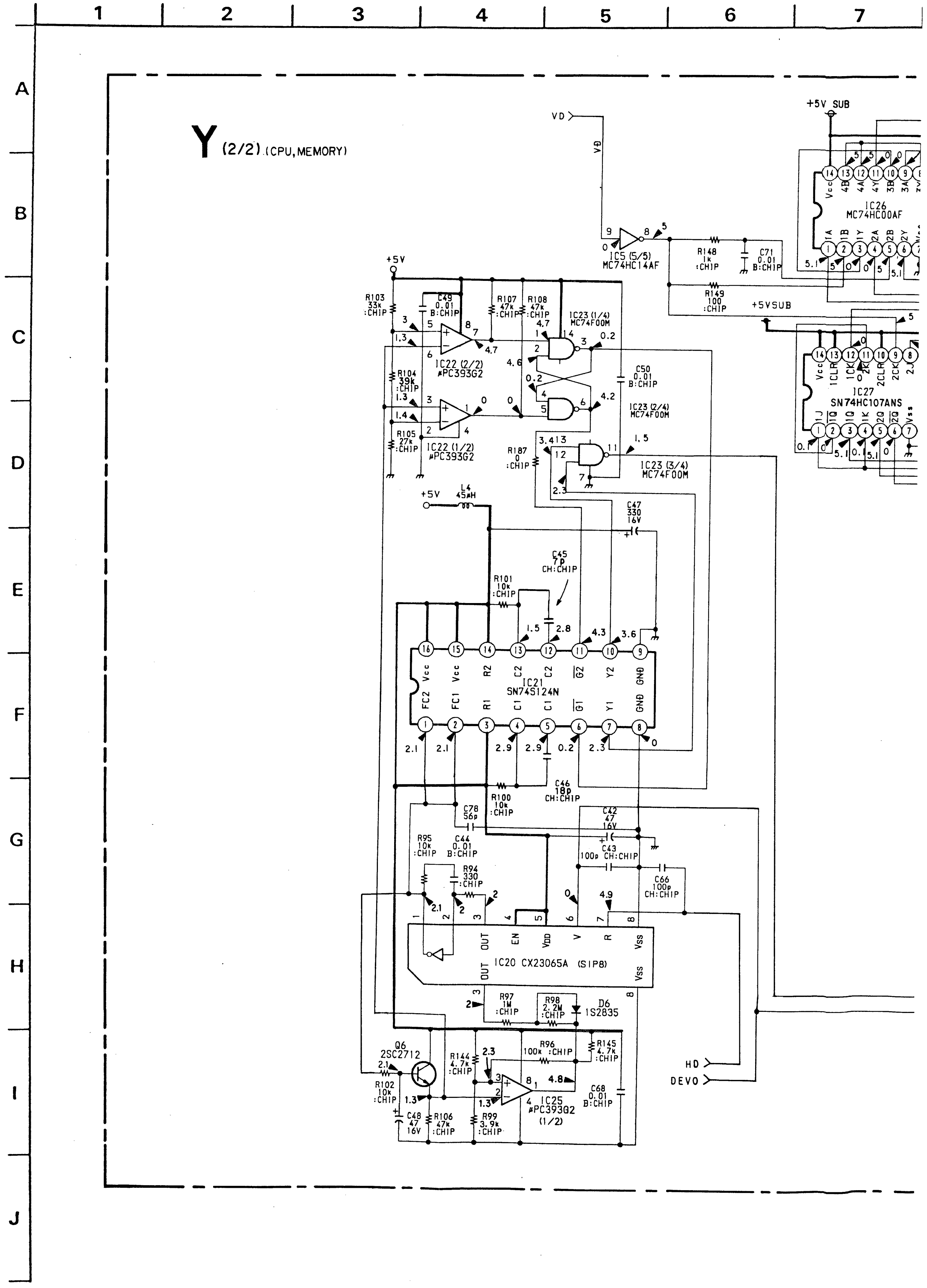
⑨ 
2.8Vp-p 12.288MHz

Y BOARD(2/2)

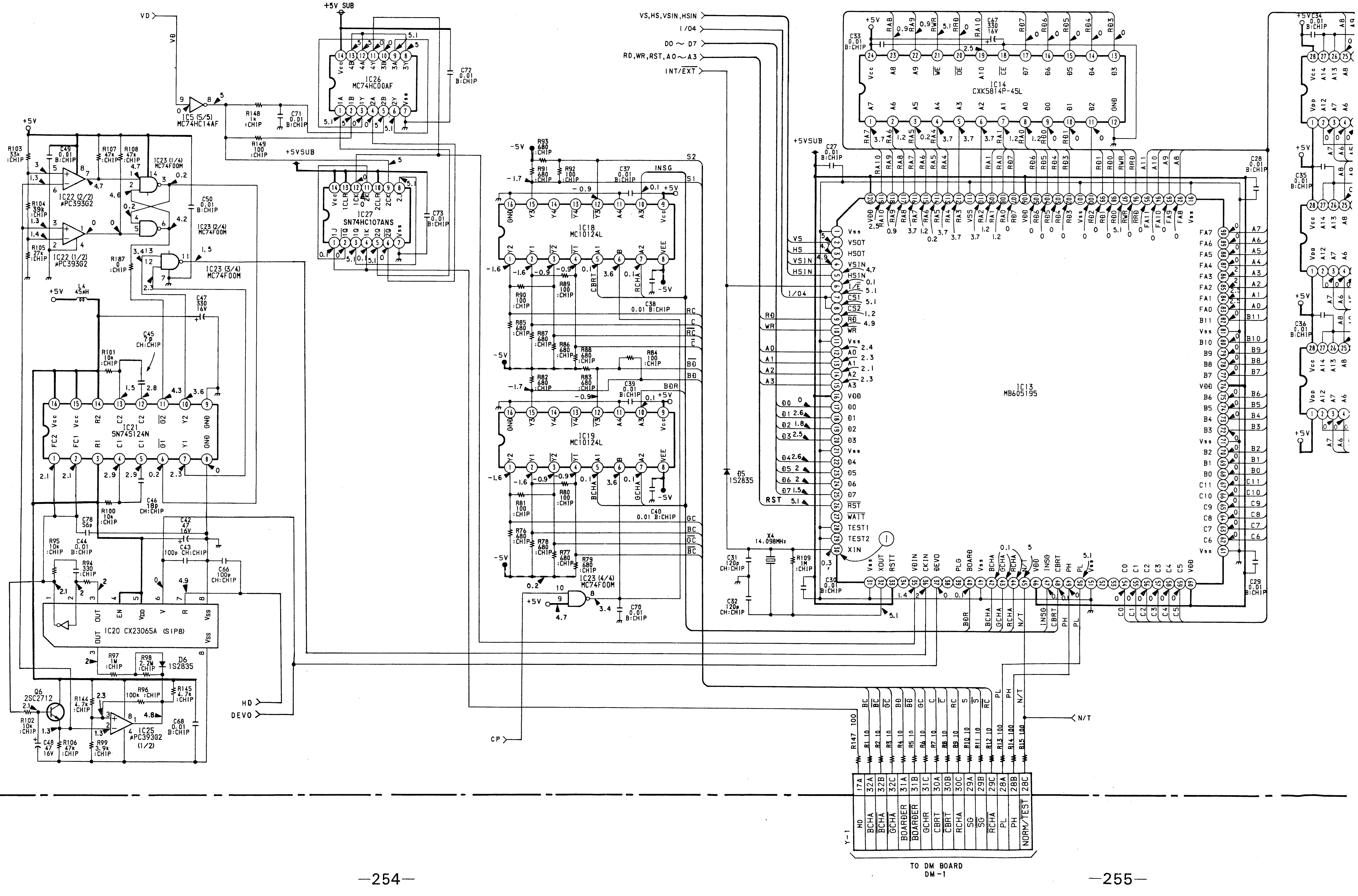


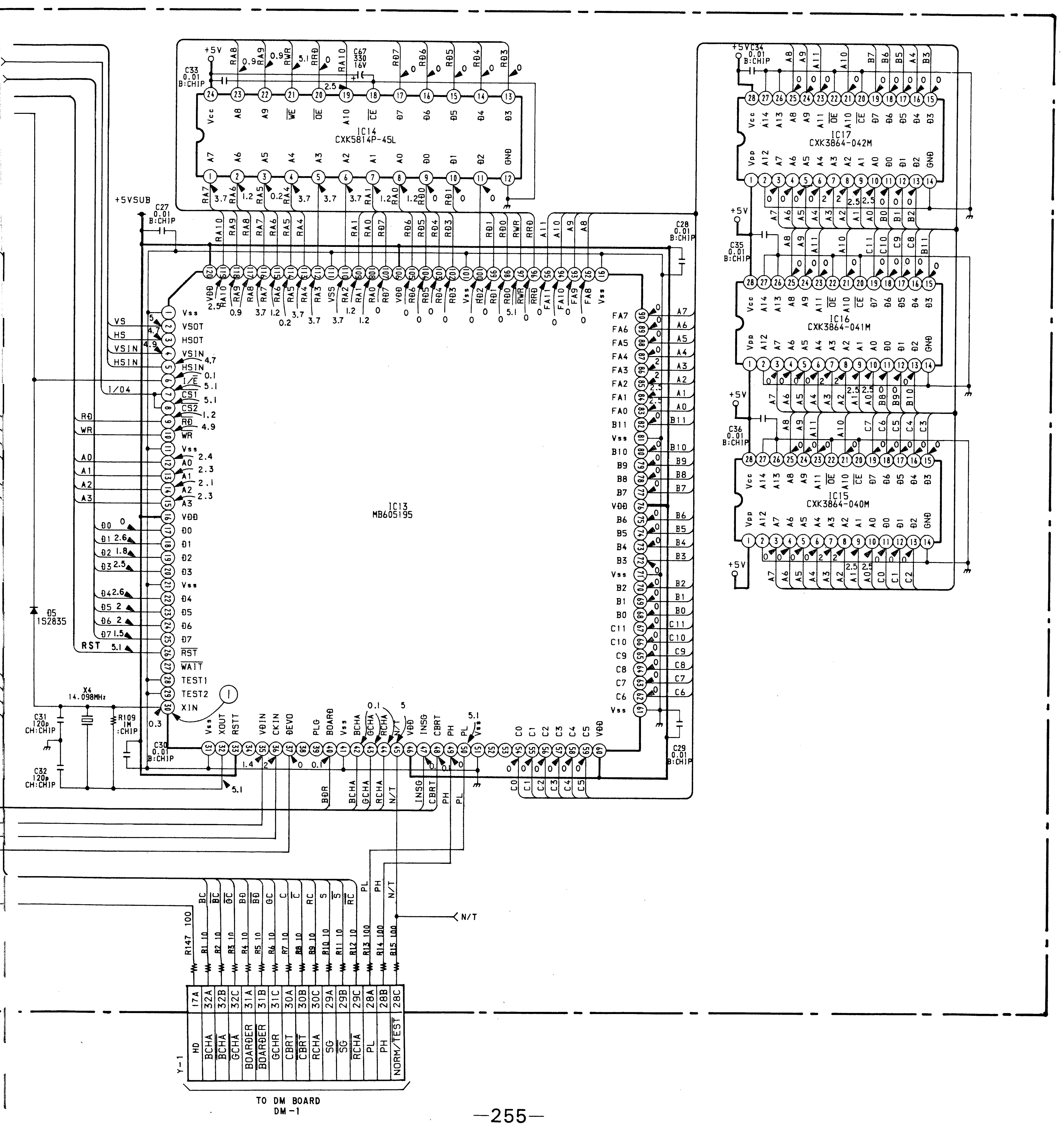
Note : INPUT SELECT button ON

Y (2/2)	IC13	MB605195	CHARACTER&TEST PATTERN GEN.
	14	CXK5814P-45L	CHARACTER DISPLAY RAM
	15	CXK3864-040M	CHARACTER FONT ROM No.1
	16	CXK3864-041M	CHARACTER FONT ROM NO.2
	17	CXK3864-042M	CHARACTER FONT ROM NO.3
	18	MC10124L	CHARACTER&TEST PATTERN SIGNAL,TTL→
	19	MC10124L	CHARACTER SIGNAL,TTL→ ECL TRANSLATION
	20	SIL8P	PHASE COMPARATER
	21	SN74S124N	DUAL VOLTAGE CONTROLLED OSC.
	22	μPC393G2	WINDOW COMPARATER
	23	MC74F00M	VCO SELECT
	25	μPC393G2	VOLTAGE COMPARATER
	26	MC74HC00AF	VD SHIFT FOR CHARACTER GEN.
	27	SN74HC107ANS	VD SHIFT FOR CHARACTER GEN.
	Q6	2SC2712	BUFFER
	D6	1S2835	


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
Y (2/2) (CPU,MEMORY)
VD
+5V SUB
IC5 (5/5) MC74HC14AF
R148 1k :CHIP
C71 0.01 B:CHIP
R149 100 :CHIP
+5VSUB
IC26 MC74HC00AF
IC27 SN74HC107ANS
+5V
R103 33k :CHIP
C49 0.01 B:CHIP
R107 47k :CHIP
R108 47k :CHIP
IC23 (1/4) MC74F00M
IC22 (2/2) μPC393G2
C50 0.01 B:CHIP
IC23 (2/4) MC74F00M
R104 39k :CHIP
R105 27k :CHIP
IC22 (1/2) μPC393G2
R187 0 :CHIP
IC23 (3/4) MC74F00M
+5V
L4 45μH
C47 330 16V
C45 7p CH:CHIP
R101 10k :CHIP
IC21 SN74S124N
C46 18p CH:CHIP
R100 10k :CHIP
C78 56p :CHIP
C42 47 16V
C43 100p CH:CHIP
R95 10k :CHIP
C44 0.01 B:CHIP
R94 330 :CHIP
C66 100p CH:CHIP
IC20 CX23065A (SIP8)
R97 1M :CHIP
R98 2.2M :CHIP
D6 1S2835
Q6 2SC2712
R144 4.7k :CHIP
R96 100k :CHIP
R145 4.7k :CHIP
R102 10k :CHIP
C48 47 16V
R106 47k :CHIP
R99 3.9k :CHIP
IC25 μPC393G2 (1/2)
C68 0.01 B:CHIP
HD
DEVO

Y (2/2) (CPU, MEMORY)


VD
HD
DEVO
CP
+5V SUB
+5VSUB
+5V
-5V
IC5 (5/5) MC74HC14AF
IC26 MC74HC00AF
IC27 SN74HC107ANS
IC22 (2/2) μPC393G2
IC22 (1/2) μPC393G2
IC23 (1/4) MC74F00M
IC23 (2/4) MC74F00M
IC23 (3/4) MC74F00M
IC23 (4/4) MC74F00M
IC21 SN74S124N
IC20 CX23065A (SIP8)
IC25 μPC393G2 (1/2)
Q6 2SC2712
D6 1S2835
L4 45μH
IC18 MC10124L
IC19 MC10124L
D5 1S2835
X4 14.098MHz
IC13 MB605195
IC14 CXK5814P-45L
VS,HS,VSIN,HSIN
I/04
D0 ~ D7
RD,WR,RST,A0~A3
INT/EXT
N/T
TO DM BOARD DM-1
Y-1
HD
BCHA
BCHA
GCHA
BOARDER
BOARDER
GCHR
CBRT
CBRT
RCHA
SG
SG
RCHA
PL
PH
NORM/TEST
17A 32A 32B 32C 31A 31B 31C 30A 30B 30C 29A 29B 29C 28A 28B 28C
R147 100
R1 10
R2 10
R3 10
R4 10
R5 10
R6 10
R7 10
R8 10
R10 10
R11 10
R12 10
R13 100
R14 100
R15 100


IC14
CXK5814P-45L
IC13
MB605195
IC17
CXK3864-042M
IC16
CXK3864-041M
IC15
CXK3864-040M
+5V
+5VSUB
C33 0.01 B:CHIP
C67 330 16V
C27 0.01 B:CHIP
C28 0.01 B:CHIP
C34 0.01 B:CHIP
C35 0.01 B:CHIP
C36 0.01 B:CHIP
C29 0.01 B:CHIP
C30 0.01 B:CHIP
C31 120p CH:CHIP
C32 120p CH:CHIP
X4 14.098MHz
R109 1M :CHIP
D5 1S2835
VS
HS
VSIN
HSIN
I/O4
RD
WR
A0
A1
A2
A3
RST
BDR
BCHA
GCHA
RCHA
N/T
INSG
CBRT
PH
PL
BC
BC
GC
BD
BD
GC
C
C
RC
S
S
RC
R147 100
R1 10
R2 10
R3 10
R4 10
R5 10
R6 10
R7 10
R8 10
R9 10
R10 10
R11 10
R12 10
R13 100
R14 100
R15 100
Y-1
17A HD
32A BCHA
32B BCHA
32C GCHA
31A BOARDER
31B BOARDER
31C GCHR
30A CBRT
30B CBRT
30C RCHA
29A SG
29B SG
29C RCHA
28A PL
28B PH
28C NORM/TEST
TO DM BOARD
DM-1

Y [CPU MEMORY]

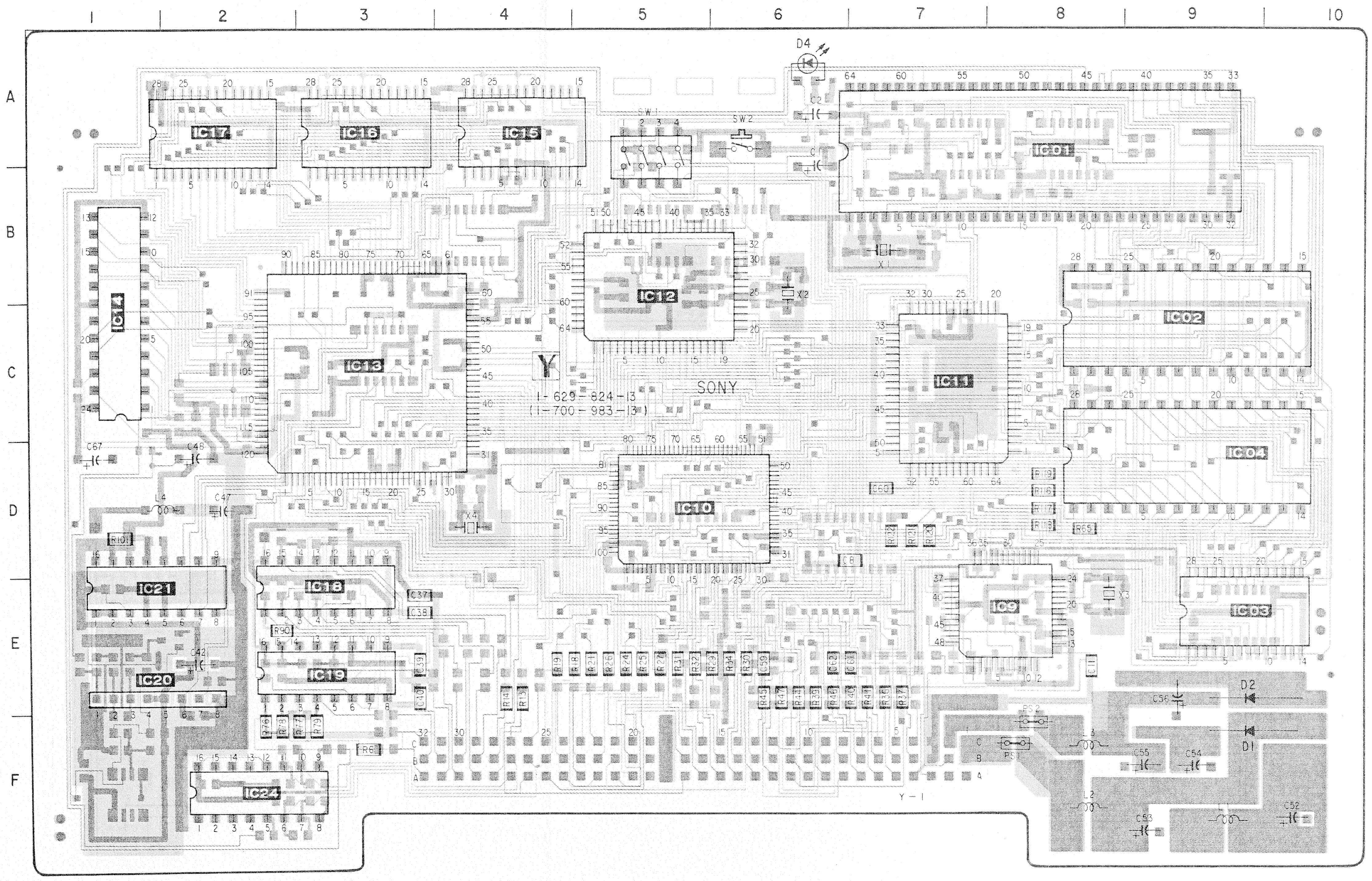
– Y BOARD –

(COMPONENT SIDE)

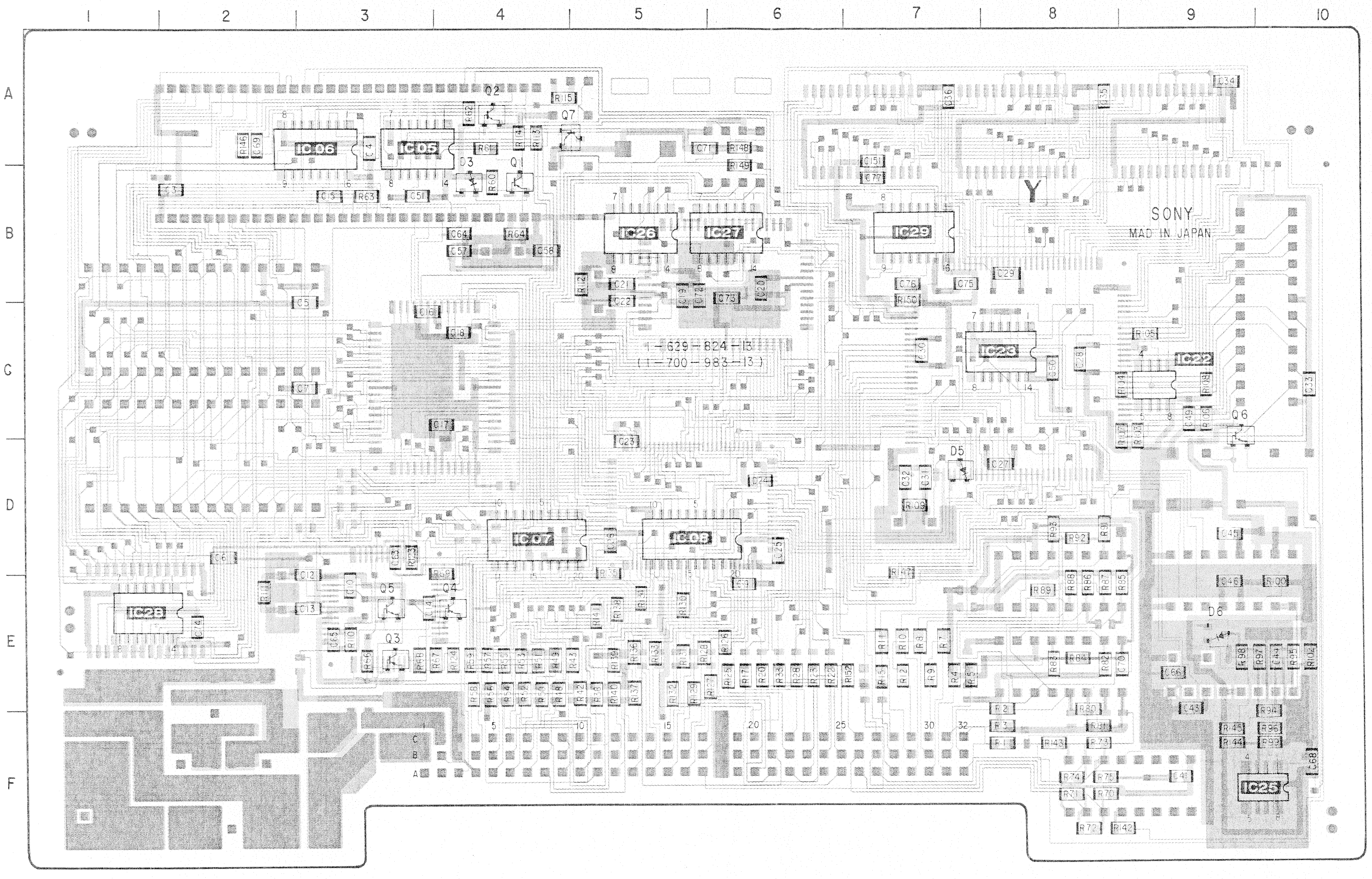
Y BOARD
(COMPONENT SIDE)

IC	
IC1	A-8
IC2	C-9
IC3	E-9
IC4	D-9
IC9	E-5
IC10	D-8
IC11	C-7
IC12	B-5
IC13	C-3
IC14	B-1
IC15	A-4
IC16	A-3
IC17	A-2
IC18	E-3
IC19	E-3
IC20	E-1
IC21	E-1
IC24	F-2

DIODE	
D1	F-9
D2	E-9


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
IC17
IC16
IC15
IC01
IC14
IC13
IC12
IC11
IC02
IC04
IC10
IC9
IC03
IC21
IC18
IC20
IC19
IC24
SW1
SW2
D4
D1
D2
X1
X2
X3
X4
L2
L4
C2
C6
C37
C38
C42
C46
C47
C52
C53
C54
C55
C56
C67
R90
R101
Y
1-629-824-13
(1-700-983-13)
SONY
Y-1

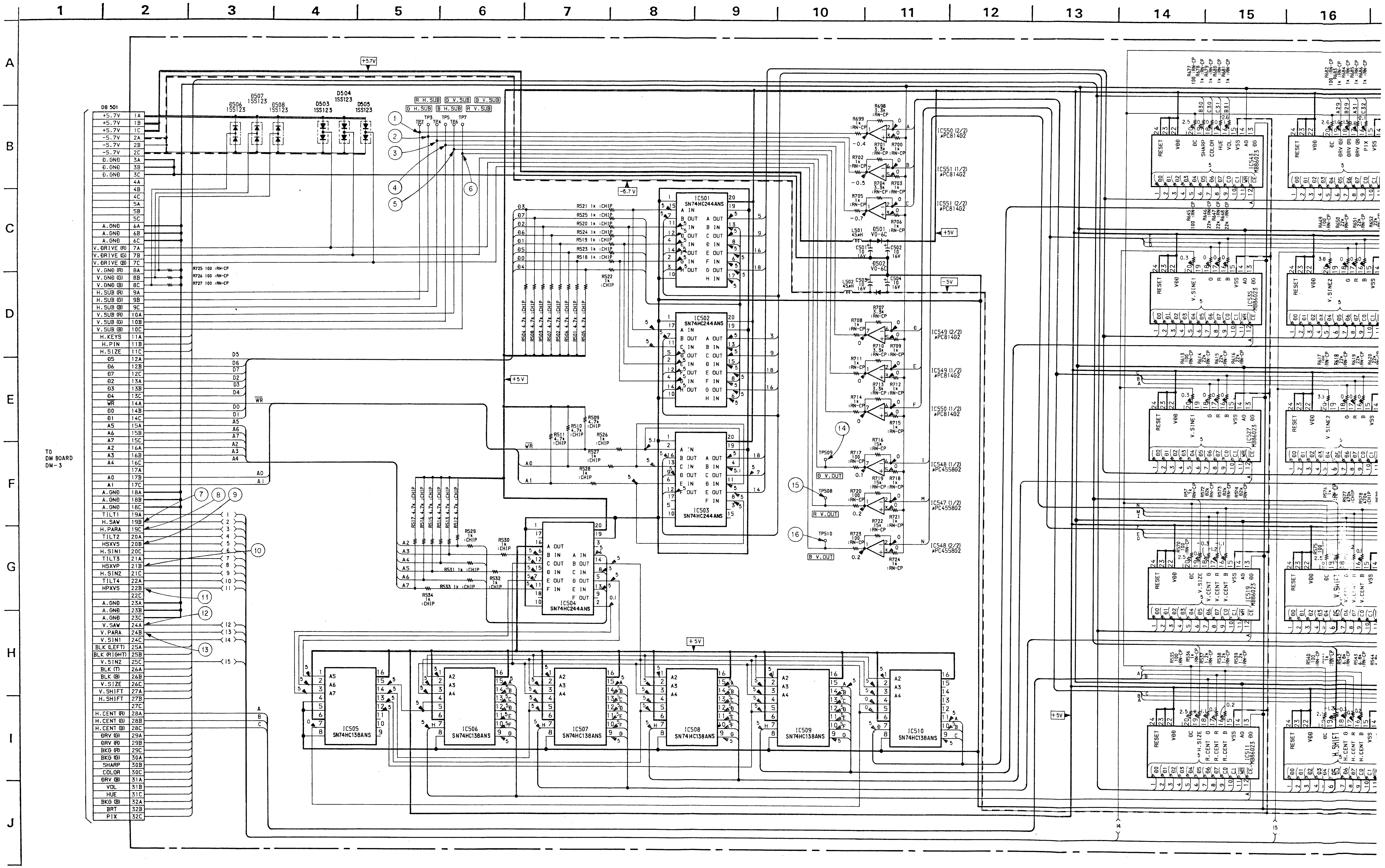
– Y BOARD –
(CONDUCTOR SIDE)

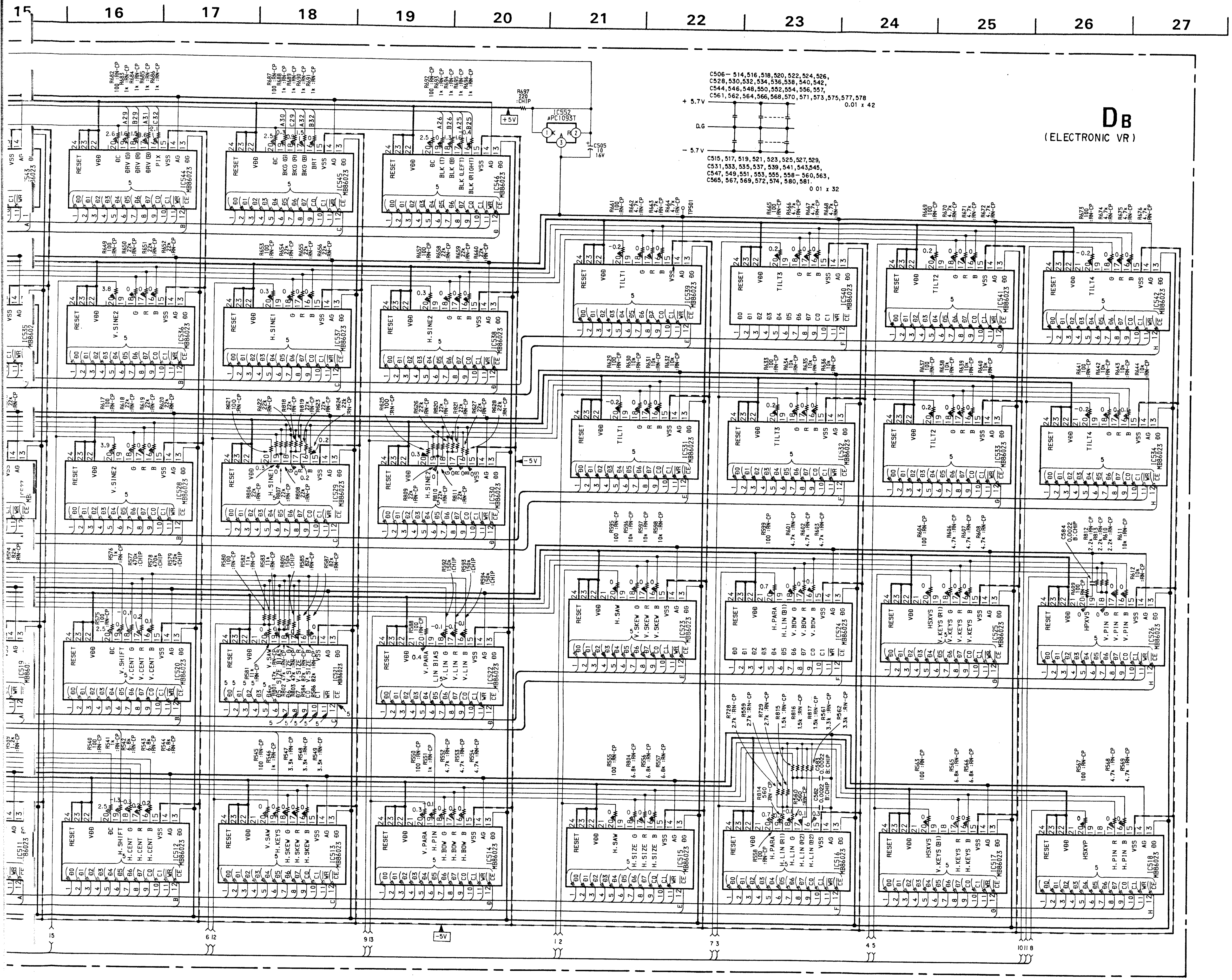

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
IC05
IC06
IC07
IC08
IC22
IC23
IC25
IC26
IC27
IC28
IC29
Q1
Q2
Q3
Q4
Q5
Q6
Q7
D3
D5
D6
SONY
MAD IN JAPAN
1-629-824-13
(1-700-983-13)
Y

**Y BOARD
(CONDUCTOR SIDE)**

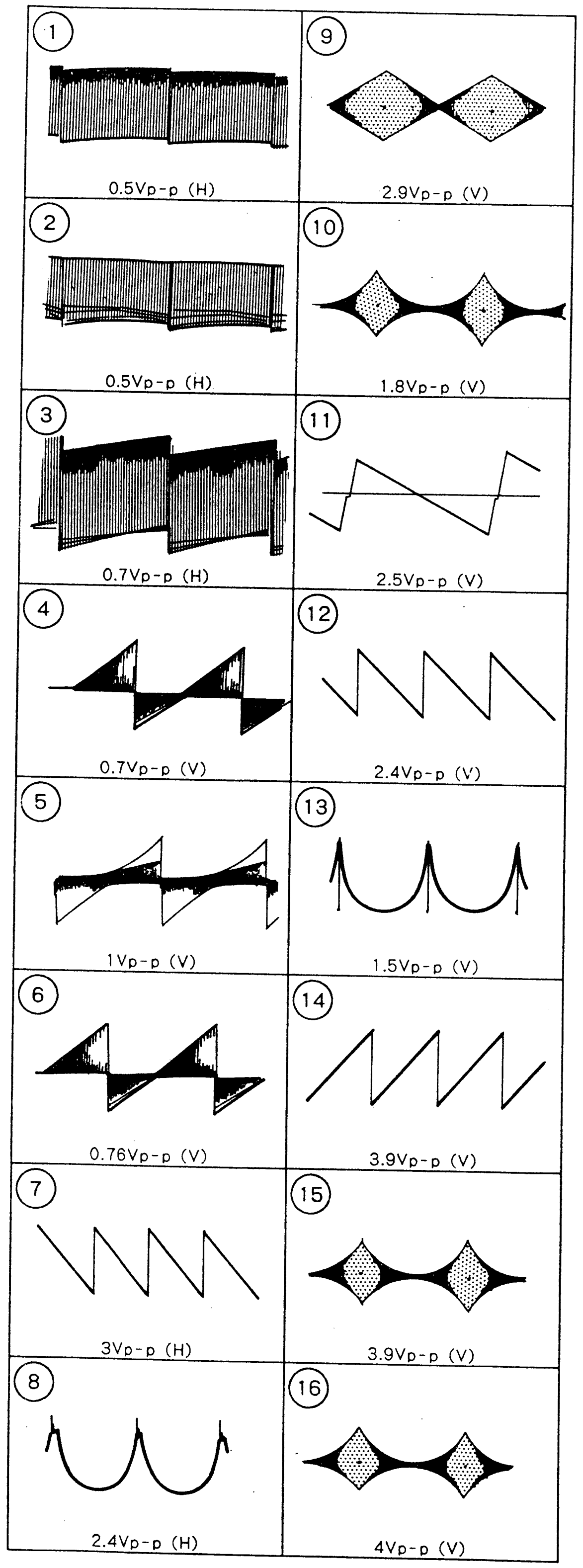
IC	
IC5	A-3
IC6	A-3
IC7	D-4
IC8	D-5
IC22	C-9
IC23	C-8
IC25	F-10
IC26	B-5
IC27	B-6
IC28	E-1
IC29	B-7
TRANSISTOR	
Q1	B-4
Q2	A-4
Q3	E-3
Q4	E-4
Q5	E-3
Q6	C-9
Q7	A-4
DIODE	
D3	B-4
D4	A-7
D5	D-7
D6	E-9

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
DB 501
+5.7V 1A
+5.7V 1B
+5.7V 1C
-5.7V 2A
-5.7V 2B
-5.7V 2C
D.GND 3A
D.GND 3B
D.GND 3C
A.GND 6A
A.GND 6B
A.GND 6C
V.DRIVE (R) 7A
V.DRIVE (G) 7B
V.DRIVE (B) 7C
V.GND (R) 8A
V.GND (G) 8B
V.GND (B) 8C
H.SUB (R) 9A
H.SUB (G) 9B
H.SUB (B) 9C
V.SUB (R) 10A
V.SUB (G) 10B
V.SUB (B) 10C
H.KEYS 11A
H.PIN 11B
H.SIZE 11C
D5 12A
D6 12B
D7 12C
D2 13A
D3 13B
D4 13C
WR 14A
D0 14B
D1 14C
A5 15A
A6 15B
A7 15C
A2 16A
A3 16B
A4 16C
17A
A0 17B
A1 17C
A.GND 18A
A.GND 18B
A.GND 18C
TILT1 19A
H.SAW 19B
H.PARA 19C
TILT2 20A
HSXVS 20B
H.SIN1 20C
TILT3 21A
HSXVP 21B
H.SIN2 21C
TILT4 22A
HPXVS 22B
22C
A.GND 23A
A.GND 23B
A.GND 23C
V.SAW 24A
V.PARA 24B
V.SIN1 24C
BLK (LEFT) 25A
BLK (RIGHT) 25B
V.SIN2 25C
BLK (T) 26A
BLK (B) 26B
V.SIZE 26C
V.SHIFT 27A
H.SHIFT 27B
27C
H.CENT (R) 28A
H.CENT (G) 28B
H.CENT (B) 28C
DRV (G) 29A
DRV (R) 29B
BKG (R) 29C
BKG (G) 30A
SHARP 30B
COLOR 30C
DRV (B) 31A
VOL 31B
HUE 31C
BKG (B) 32A
BRT 32B
PIX 32C
TO DM BOARD DM-3
D506 1SS123
D507 1SS123
D508 1SS123
D503 1SS123
D504 1SS123
D505 1SS123
+5.7V
-5.7V
+5V
-5V
R H.SUB
G V.SUB
B V.SUB
G H.SUB
B H.SUB
R V.SUB
TP2 TP4 TP5 TP6 TP7
R725 100 :RN-CP
R724 100 :RN-CP
R727 100 :RN-CP
IC501 SN74HC244ANS
IC502 SN74HC244ANS
IC503 SN74HC244ANS
IC504 SN74HC244ANS
IC505 SN74HC138ANS
IC506 SN74HC138ANS
IC507 SN74HC138ANS
IC508 SN74HC138ANS
IC509 SN74HC138ANS
IC510 SN74HC138ANS
IC550 (2/2) μPC814G2
IC551 (1/2) μPC814G2
IC551 (2/2) μPC814G2
IC549 (2/2) μPC814G2
IC549 (1/2) μPC814G2
IC550 (1/2) μPC814G2
IC548 (1/2) μPC4558G2
IC547 (1/2) μPC4558G2
IC548 (2/2) μPC4558G2
L501 45μH
L502 45μH
D501 VO-6C
D502 VO-6C
C501 10 16V
C502 10 16V
C503 10 16V
C504 10 16V
TP509 G V.OUT
TP508 R V.OUT
TP510 B V.OUT
IC543 MB86023
IC535 MB86023
IC527 MB86023
IC519 MB86023
IC511 MB86023
RESET VDD DC SHARP COLOR HUE VOL VSS AG DG
V.SINE1 V.SINE2
H.SIZE R.CENT G R.CENT R V.CENT B
H.SHIFT H.CENT G H.CENT R H.CENT B
V.SHIFT V.CENT G V.CENT R V.CENT B
DRV (G) DRV (R) DRV (B) PIX BRT
D0 D1 D2 D3 D4 D5 D6 D7 C0 C1 WR CE


15
16
17
18
19
20
21
22
23
24
25
26
27
DB
(ELECTRONIC VR)
C506- 514,516,518,520,522,524,526,
C528,530,532,534,536,538,540,542,
C544,546,548,550,552,554,556,557,
C561,562,564,566,568,570,571,573,575,577,578
0.01 x 42
C515,517,519,521,523,525,527,529,
C531,533,535,537,539,541,543,545,
C547,549,551,553,555,558-560,563,
C565,567,569,572,574,580,581.
0.01 x 32
+5.7V
D.G
-5.7V
IC552
PC1093T
C505
10
16V
R697
220
CHIP
+5V
-5V
IC544 MB86023 DG
IC545 MB86023 DG
IC546 MB86023 DG
IC536 MB86023 DG
IC537 MB86023 DG
IC538 MB86023 DG
IC539 MB86023 DG
IC540 MB86023 DG
IC541 MB86023 DG
IC542 MB86023 DG
IC528 MB86023 DG
IC529 MB86023 DG
IC530 MB86023 DG
IC531 MB86023 DG
IC532 MB86023 DG
IC533 MB86023 DG
IC534 MB86023 DG
IC520 MB86023 DG
IC521 MB86023 DG
IC522 MB86023 DG
IC523 MB86023 DG
IC524 MB86023 DG
IC525 MB86023 DG
IC526 MB86023 DG
IC512 MB86023 DG
IC513 MB86023 DG
IC514 MB86023 DG
IC515 MB86023 DG
IC516 MB86023 DG
IC517 MB86023 DG
IC518 MB86023 DG
BRV (R)
BRV (G)
BRV (B)
PIX
BKG (R)
BKG (G)
BKG (B)
BRT
BLK (T)
BLK (B)
BLK (LEFT)
BLK (RIGHT)
TILT1
TILT2
TILT3
TILT4
V.SINE1
V.SINE2
H.SINE1
H.SINE2
V.SHIFT
V.CENT R
V.CENT G
V.CENT B
V.SAW
V.SKEW R
V.SKEW G
V.SKEW B
V.SIZE R
V.SIZE G
V.SIZE B
V.PARA
V.LIN BIAS
V.LIN G
V.LIN B
H.SAW
H.PARA
H.LIN (B1)
H.LIN (R1)
H.LIN (R2)
H.LIN (B2)
V.BOW R
V.BOW G
V.BOW B
HSXVS
V.KEYS (R1)
V.KEYS (B1)
V.KEYS R
V.KEYS G
V.KEYS B
HPXVS
V.PIN R
V.PIN G
V.PIN B
H.SHIFT
H.CENT R
H.CENT G
H.CENT B
H.KEYS
H.SKEW G
H.SKEW R
H.SKEW B
H.PIN
H.BOW G
H.BOW R
H.BOW B
H.SIZE G
H.SIZE R
H.SIZE B
H.KEYS R
H.KEYS B
HSXVP
H.PIN R
H.PIN B
RESET
VDD
VSS
AG
DC
CE
WR
5 12
6 12
9 13
1 2
7 3
4 5
10 11 8

DB BOARD


①
0.5Vp-p (H)
⑨
2.9Vp-p (V)
②
0.5Vp-p (H)
⑩
1.8Vp-p (V)
③
0.7Vp-p (H)
⑪
2.5Vp-p (V)
④
0.7Vp-p (V)
⑫
2.4Vp-p (V)
⑤
1Vp-p (V)
⑬
1.5Vp-p (V)
⑥
0.76Vp-p (V)
⑭
3.9Vp-p (V)
⑦
3Vp-p (H)
⑮
3.9Vp-p (V)
⑧
2.4Vp-p (H)
⑯
4Vp-p (V)

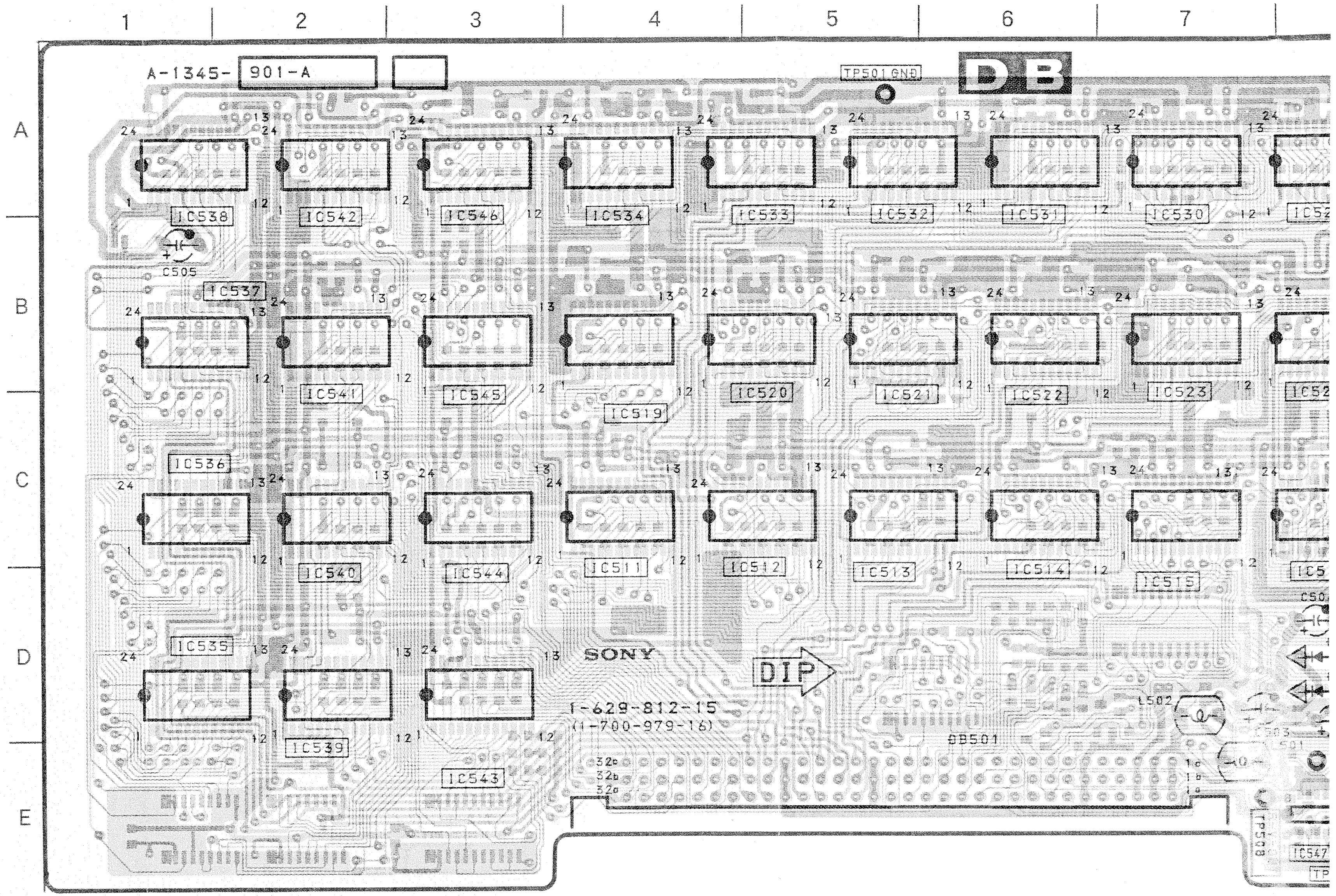
DB	C501	SN74HC244ANS	DATA BUS BUFF-1
	502	SN74HC244ANS	DATA BUS BUFF-2
	503	SN74HC244ANS	ADDRESS BUS BUFF-1
	504	SN74HC244ANS	ADDRESS BUS BUFF-2
	505	SN74HC138ANS	ADDRESS DECODE-1
	506	SN74HC138ANS	ADDRESS DECODE-2
	507	SN74HC138ANS	ADDRESS DECODE-3
	508	SN74HC138ANS	ADDRESS DECODE-4
	509	SN74HC138ANS	ADDRESS DECODE-5
	510	SN74HC138ANS	ADDRESS DECODE-6
	511	MB86023	H CENT. CONT-1
	512	MB86023	H CENT. CONT-2
	513	MB86023	H.SKEW CONT
	514	MB86023	H.BOW CONT
	515	MB86023	H.SIZE CONT
	516	MB86023	H.LIN CONT
	517	MB86023	H.KEYS CONT
	518	MB86023	H.PIN CONT
	519	MB86023	V CENT. CONT-1
	520	MB86023	V CENT. CONT-2
	521	MB86023	V.SIZE CONT
	522	MB86023	V.LIN CONT
	523	MB86023	V.SKEW CONT
	524	MB86023	V.BOW CONT
	525	MB86023	V.KEYS CONT
	526	MB86023	V.PIN CONT
	527	MB86023	H. ZONE CONT-1
	528	MB86023	H. ZONE CONT-2
	529	MB86023	H. ZONE CONT-3
	530	MB86023	H. ZONE CONT-4
	531	MB86023	H. ZONE CONT-5
	532	MB86023	H. ZONE CONT-6
	533	MB86023	H. ZONE CONT-7
	534	MB86023	H. ZONE CONT-8
	535	MB86023	V. ZONE CONT-1
	536	MB86023	V. ZONE CONT-2
	537	MB86023	V. ZONE CONT-3
	538	MB86023	V. ZONE CONT-4
	539	MB86023	V. ZONE CONT-5
	540	MB86023	V. ZONE CONT-6
	541	MB86023	V. ZONE CONT-7
	542	MB86023	V. ZONE CONT-8
	543	MB86023	USER CONT
	544	MB86023	DRV. CONT
	545	MB86023	BKG CONT
	546	MB86023	BLK CONT
	547	μPC4558G2	V.OUT-1
	548	μPC4558G2	V.OUT-2
	549	μPC814G2	SUB OUT-1
	550	μPC814G2	SUB OUT-2
	551	μPC814G2	SUB OUT-3
	552	μPC1093T	+2.5V reg
	D501	V06C	+5.7V
	502	V06C	–5.7V
	503	1SS123	PROT-1
	504	1SS123	PROT-2
	505	1SS123	PROT-3
	506	1SS123	PROT-4
	507	1SS123	PROT-5
	508	1SS123	PROT-6

DB BOARD
(COMPONENT SIDE)

IC	
IC511	C-4
IC512	C-5
IC513	C-5
IC514	C-6
IC515	C-7
IC516	C-8
IC517	C-9
IC518	C-9
IC519	B-4
IC520	B-5
IC521	B-5
IC522	B-6
IC523	B-7
IC524	B-8
IC525	B-9
IC526	B-9
IC527	A-9
IC528	A-9
IC529	A-8
IC530	A-7
IC531	A-6
IC532	A-5
IC533	A-5
IC534	A-4
IC535	D-1
IC536	C-1
IC537	B-1
IC538	A-1
IC539	D-1
IC540	C-2
IC541	B-2
IC542	A-2
IC543	D-3
IC544	C-3
IC545	B-3
IC546	A-3
IC547	E-8
IC548	E-8
IC549	E-9
IC550	E-9
IC551	E-10
DIODE	
D501	D-8
D502	D-8

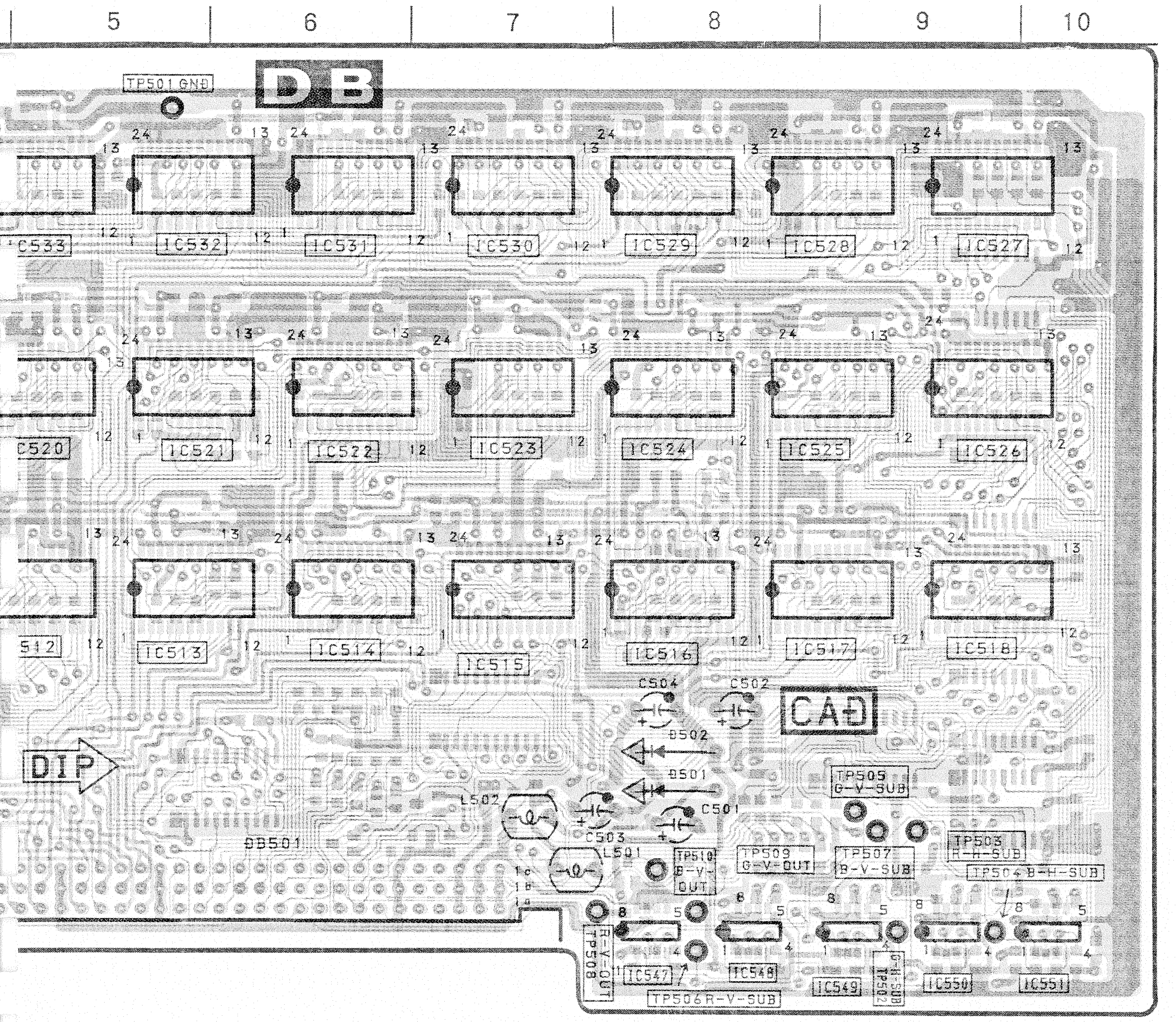
– DB BOARD –

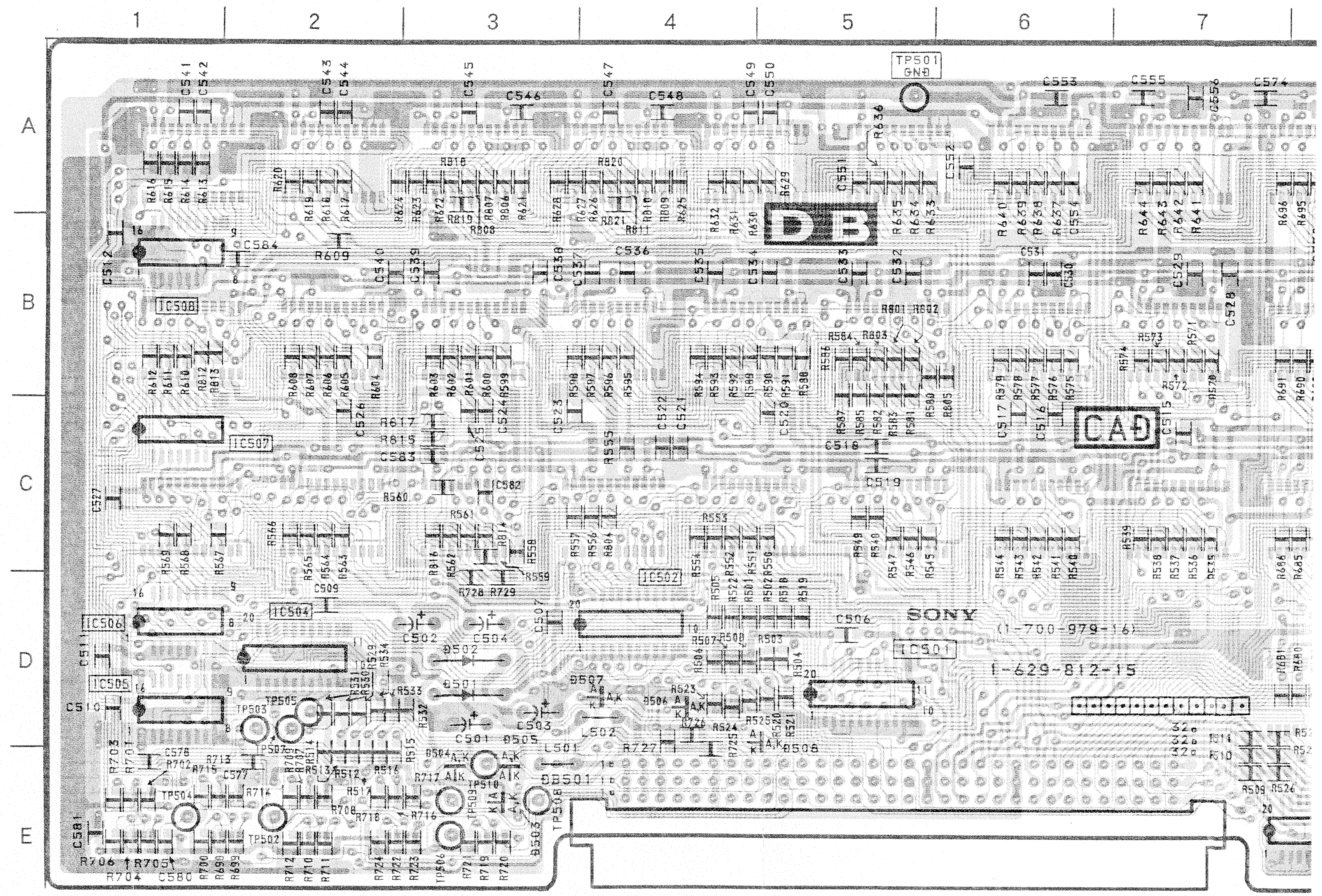
(COMPONENT SIDE)


1
2
3
4
5
6
7
A
B
C
D
E
A-1345-901-A
TP501 GND
DB
IC538
IC542
IC546
IC534
IC533
IC532
IC531
IC530
C505
IC537
IC541
IC545
IC519
IC520
IC521
IC522
IC523
IC536
IC540
IC544
IC511
IC512
IC513
IC514
IC515
IC535
IC539
IC543
SONY
DIP
1-629-812-15
(1-700-979-16)
DB501
L502
TP508
IC547

DB [ELECTRONIC VR]

– DB BOARD –
(CONDUCTOR SIDE)

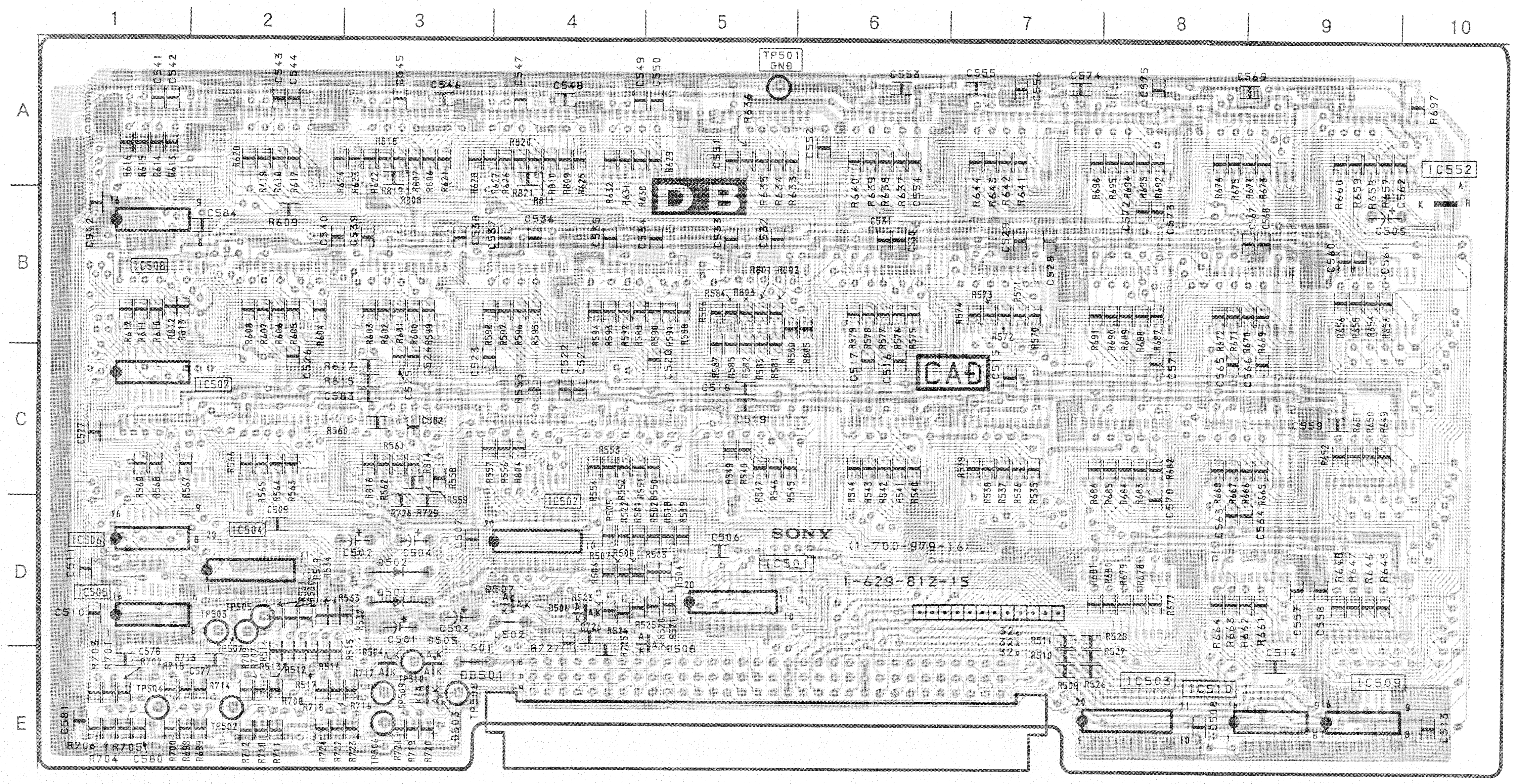

5
6
7
8
9
10
TP501 GND
DB
IC533
IC532
IC531
IC530
IC529
IC528
IC527
C520
IC521
IC522
IC523
IC524
IC525
IC526
512
IC513
IC514
IC515
IC516
IC517
IC518
C504
C502
CAD
DIP
D502
D501
L502
C503
L501
C501
DB501
TP510 B-V-OUT
TP509 G-V-OUT
TP507 B-V-SUB
TP505 G-V-SUB
TP503 R-H-SUB
TP504 B-H-SUB
TP508 R-V-OUT
IC542
IC548
IC549
TP502 G-H-SUB
IC550
IC551
TP506 R-V-SUB


1
2
3
4
5
6
7
A
B
C
D
E
TP501 GND
C541
C542
C543
C544
C545
C546
C547
C548
C549
C550
C553
C555
C574
DB
IC508
C584
R609
IC507
R617
R815
C583
CAD
C519
C516
IC506
IC505
IC504
IC502
IC501
C502
C504
SONY
(1-700-979-16)
1-629-812-15
TP503
TP505
TP504
TP502
TP510
TP506
TP508
D501
D502
D503
D504
D505
D506
D507
L501
L502
DB501
C581
C580
R706
R705
R704

.ECTRONIC VR]

– DB BOARD –

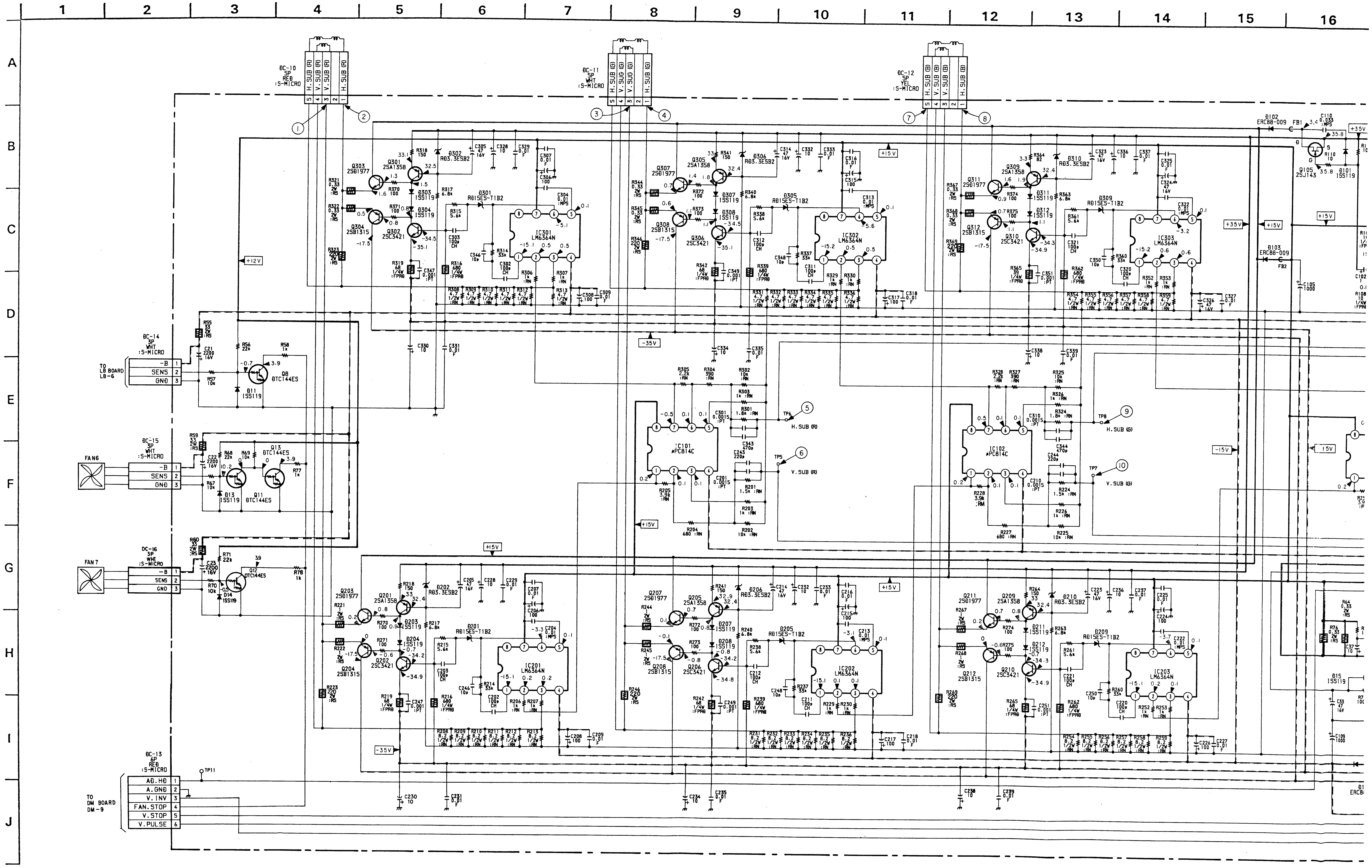
(CONDUCTOR SIDE)

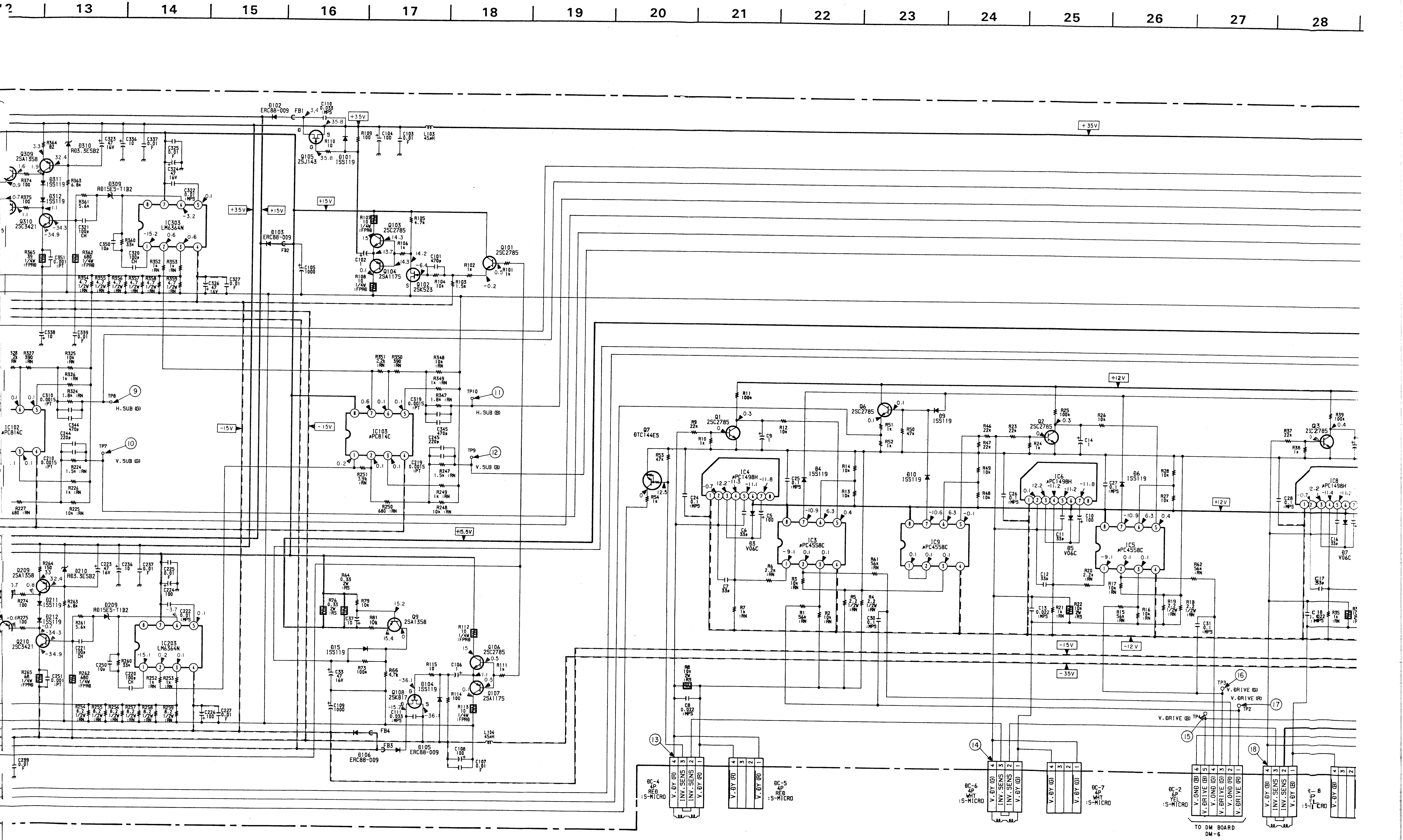

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
TP501 GND
D B
CAD
SONY
(1-700-879-16)
1-629-812-15
IC501
IC502
IC503
IC504
IC505
IC506
IC507
IC509
IC510
IC552
TP502
TP503
TP504
TP505
TP506
TP508
TP509
TP510

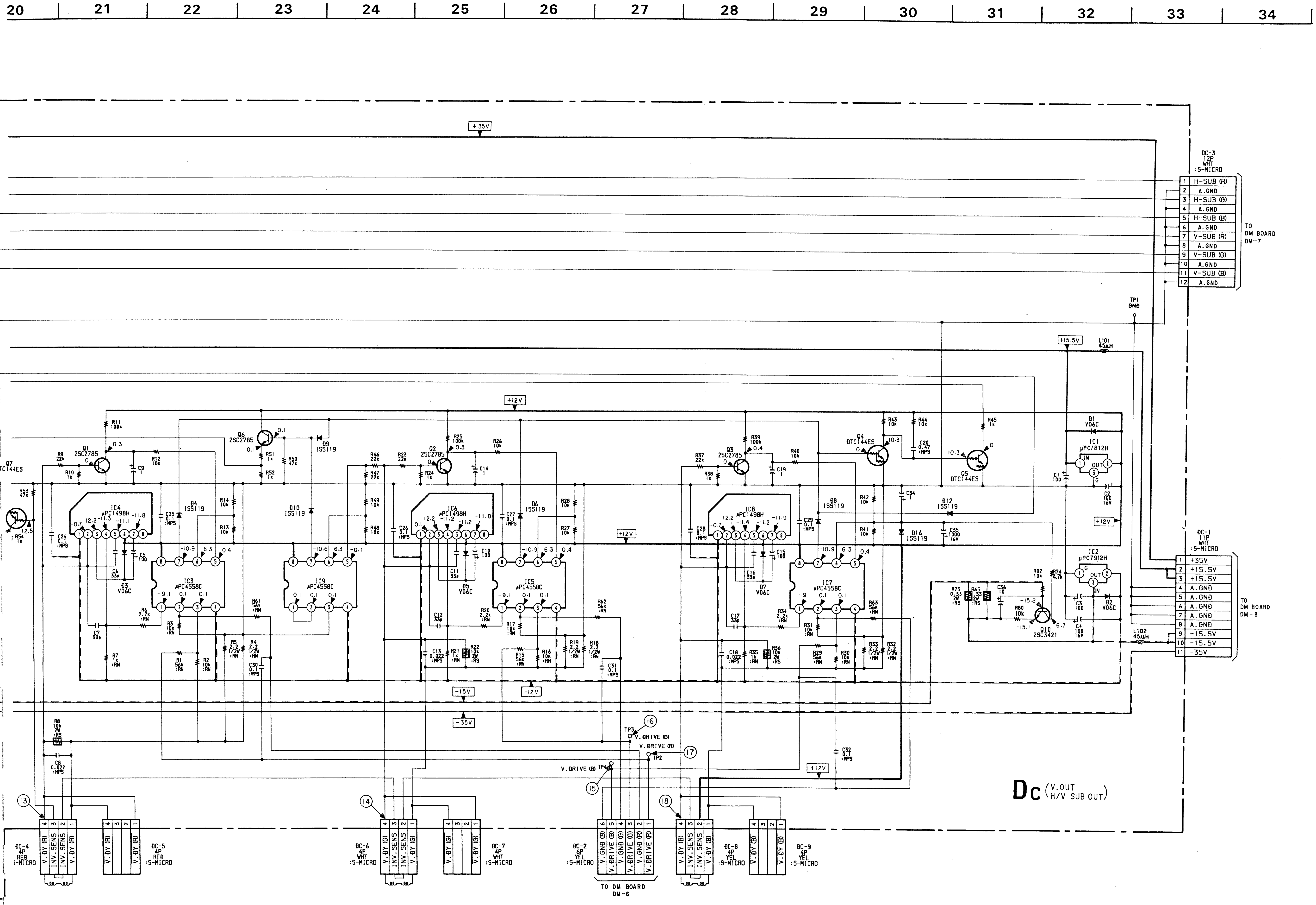
DB BOARD (CONDUCTOR SIDE)

IC	
IC501	D-5
IC502	D-4
IC503	E-8
IC504	D-2
IC505	D-1
IC506	D-1
IC507	C-1
IC508	B-1
IC509	E-9
IC510	E-9
IC552	A-10
DIODE	
D501	D-3
D502	D-3
D503	E-3
D504	E-3
D505	D-3
D506	D-4
D507	D-4
D508	D-5

- ░ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

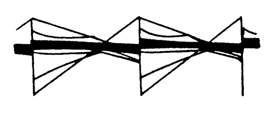

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
DC-10 5P RED :S-MICRO
H.SUB (R)
V.SUB (R)
DC-11 5P WHT :S-MICRO
H.SUB (G)
V.SUB (G)
DC-12 5P YEL :S-MICRO
H.SUB (B)
V.SUB (B)
DC-14 3P WHT :S-MICRO
TO LB BOARD LB-6
-B
SENS
GND
DC-15 3P WHT :S-MICRO
FAN6
DC-16 3P WHT :S-MICRO
FAN 7
DC-13 6P RED :S-MICRO
TO DM BOARD DM-9
AD.HD
A.GND
V.INV
FAN.STOP
V.STOP
V.PULSE
TP11
IC301 LM6364N
IC302 LM6364N
IC303 LM6364N
IC201 LM6364N
IC202 LM6364N
IC203 LM6364N
IC101 μPC814C
IC102 μPC814C
Q8 DTC144ES
Q11 DTC144ES
Q13 DTC144ES
Q12 DTC144ES
Q301 2SA1358
Q302 2SC3421
Q303 2SD1977
Q304 2SB1315
Q305 2SA1358
Q306 2SC3421
Q307 2SD1977
Q308 2SB1315
Q309 2SA1358
Q310 2SC3421
Q311 2SD1977
Q312 2SB1315
Q201 2SA1358
Q202 2SC3421
Q203 2SD1977
Q204 2SB1315
Q205 2SA1358
Q206 2SC3421
Q207 2SD1977
Q208 2SB1315
Q209 2SA1358
Q210 2SC3421
Q211 2SD1977
Q212 2SB1315
Q105 2SJ143
D102 ERC88-009
D103 ERC88-009
D101 1SS119
FB1
FB2
TP5
TP6
TP7
TP8
H.SUB (R)
V.SUB (R)
H.SUB (G)
V.SUB (G)
+12V
+15V
-15V
+35V
-35V
RD3.3ESB2
RD15ES-T1B2
1SS119


13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
+35V
+15V
-15V
+15.5V
+12V
-12V
-35V
Q309 2SA1358
Q310 2SC3421
IC303 LM6364N
Q209 2SA1358
Q210 2SC3421
IC203 LM6364N
IC102 μPC814C
IC103 μPC814C
Q105 2SJ143
Q103 2SC2785
Q104 2SA1175
Q102 2SK523
Q101 2SC2785
D102 ERC88-009
D103 ERC88-009
D105 ERC88-009
D106 ERC88-009
L103 45μH
L104 45μH
Q9 2SA1358
Q106 2SC2785
Q107 2SA1175
Q108 2SK817
TP8 H. SUB (G)
TP10 H. SUB (B)
TP7 V. SUB (G)
TP9 V. SUB (B)
Q7 DTC144ES
Q1 2SC2785
Q6 2SC2785
Q2 2SC2785
Q3 2SC2785
IC4 μPC1498H
IC3 μPC4558C
IC9 μPC4558C
IC6 μPC1498H
IC5 μPC4558C
IC8 μPC1498H
D3 V06C
D5 V06C
D7 V06C
TP3 V. DRIVE (G)
V. DRIVE (R)
TP2
V. DRIVE (B) TP4
DC-4 4P RED :S-MICRO
V. DY (R)
INV. SENS
DC-5 4P RED :S-MICRO
DC-6 4P WHT :S-MICRO
V. DY (G)
DC-7 4P WHT :S-MICRO
DC-2 6P YEL :S-MICRO
V. GND (B)
V. DRIVE (B)
V. GND (G)
V. DRIVE (G)
V. DRIVE (R)
TO DM BOARD DM-6
V. DY (B)
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱


20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
+35V
+12V
-15V
-12V
-35V
+15.5V
IC4 μPC1498H
IC3 μPC4558C
IC9 μPC4558C
IC6 μPC1498H
IC5 μPC4558C
IC8 μPC1498H
IC7 μPC4558C
IC1 μPC7812H
IC2 μPC7912H
Q1 2SC2785
Q6 2SC2785
Q2 2SC2785
Q3 2SC2785
Q4 DTC144ES
Q5 DTC144ES
Q7 DTC144ES
Q10 2SC3421
D9 1SS119
D10 1SS119
D4 1SS119
D6 1SS119
D8 1SS119
D12 1SS119
D16 1SS119
D3 V06C
D5 V06C
D7 V06C
D1 V06C
D2 V06C
L101 45μH
L102 45μH
TP1 GND
CN-3 12P WHT :S-MICRO
1 H-SUB (R)
2 A.GND
3 H-SUB (G)
4 A.GND
5 H-SUB (B)
6 A.GND
7 V-SUB (R)
8 A.GND
9 V-SUB (G)
10 A.GND
11 V-SUB (B)
12 A.GND
TO DM BOARD DM-7
CN-1 11P WHT :S-MICRO
1 +35V
2 +15.5V
3 +15.5V
4 A.GND
5 A.GND
6 A.GND
7 A.GND
8 A.GND
9 -15.5V
10 -15.5V
11 -35V
TO DM BOARD DM-8
TP3 V.DRIVE (G) ⑯
V.DRIVE (R) TP2 ⑰
V.DRIVE (B) TP4 ⑮
⑬
⑭
⑱
CN-4 4P RED :S-MICRO
V.DY (R)
INV.SENS
INV.SENS
V.DY (R)
CN-5 4P RED :S-MICRO
CN-6 4P WHT :S-MICRO
V.DY (G)
CN-7 4P WHT :S-MICRO
CN-2 6P YEL :S-MICRO
V.GND (B)
V.DRIVE (B)
V.GND (G)
V.DRIVE (G)
V.GND (R)
V.DRIVE (R)
TO DM BOARD DM-6
CN-8 4P YEL :S-MICRO
V.DY (B)
CN-9 4P YEL :S-MICRO
Dc (V.OUT H/V SUB OUT)

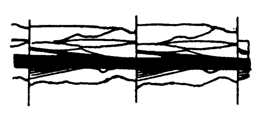
DC BOARD

①



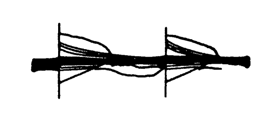
30Vp-p (V)

②



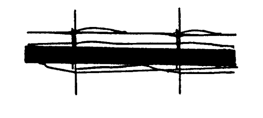
25Vp-p (V)

③



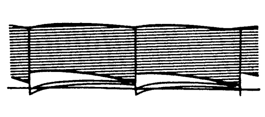
25Vp-p (V)

④



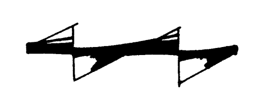
30Vp-p (V)

⑤



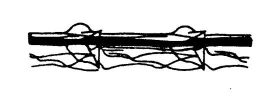
0.48Vp-p (V)

⑥



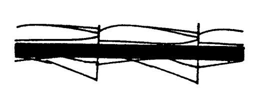
1.1Vp-p (V)

⑦



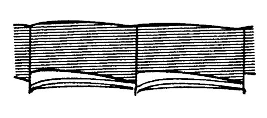
122Vp-p (V)

⑧



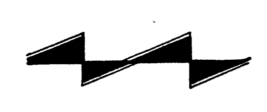
40Vp-p (V)

⑨



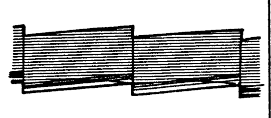
0.5Vp-p (V)

⑩



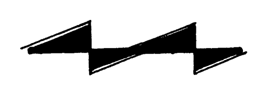
1Vp-p (V)

⑪



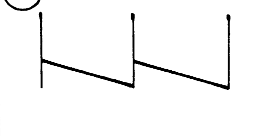
0.8Vp-p (V)

⑫



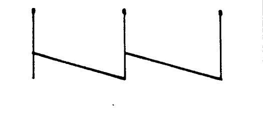
1Vp-p (V)

⑬



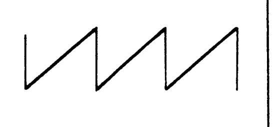
40Vp-p (V)

⑭



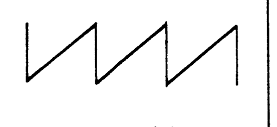
40Vp-p (V)

⑮



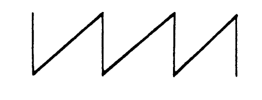
4Vp-p (V)

⑯



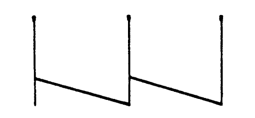
4Vp-p (V)

⑰



4Vp-p (V)

⑱

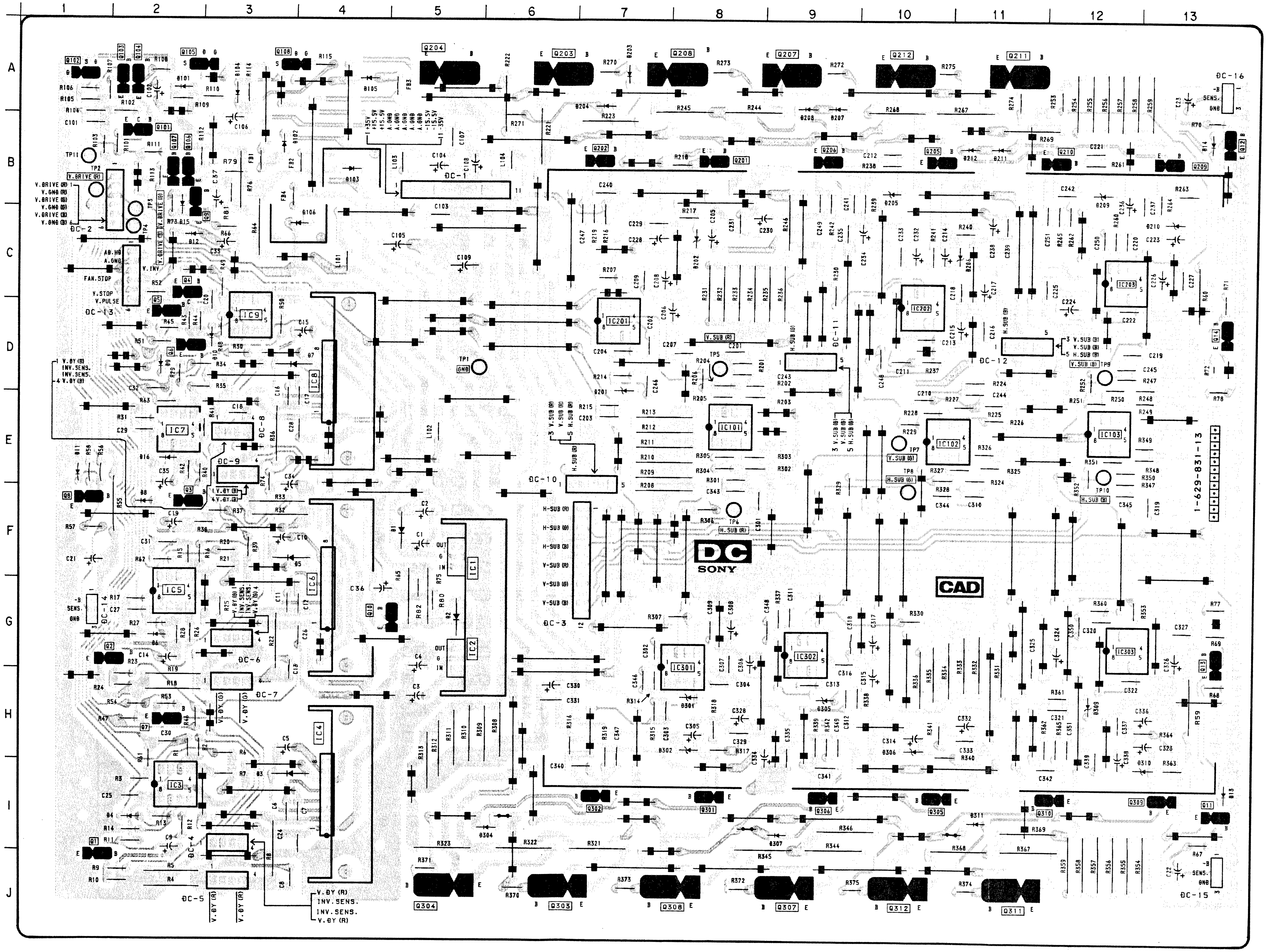


40Vp-p (V)

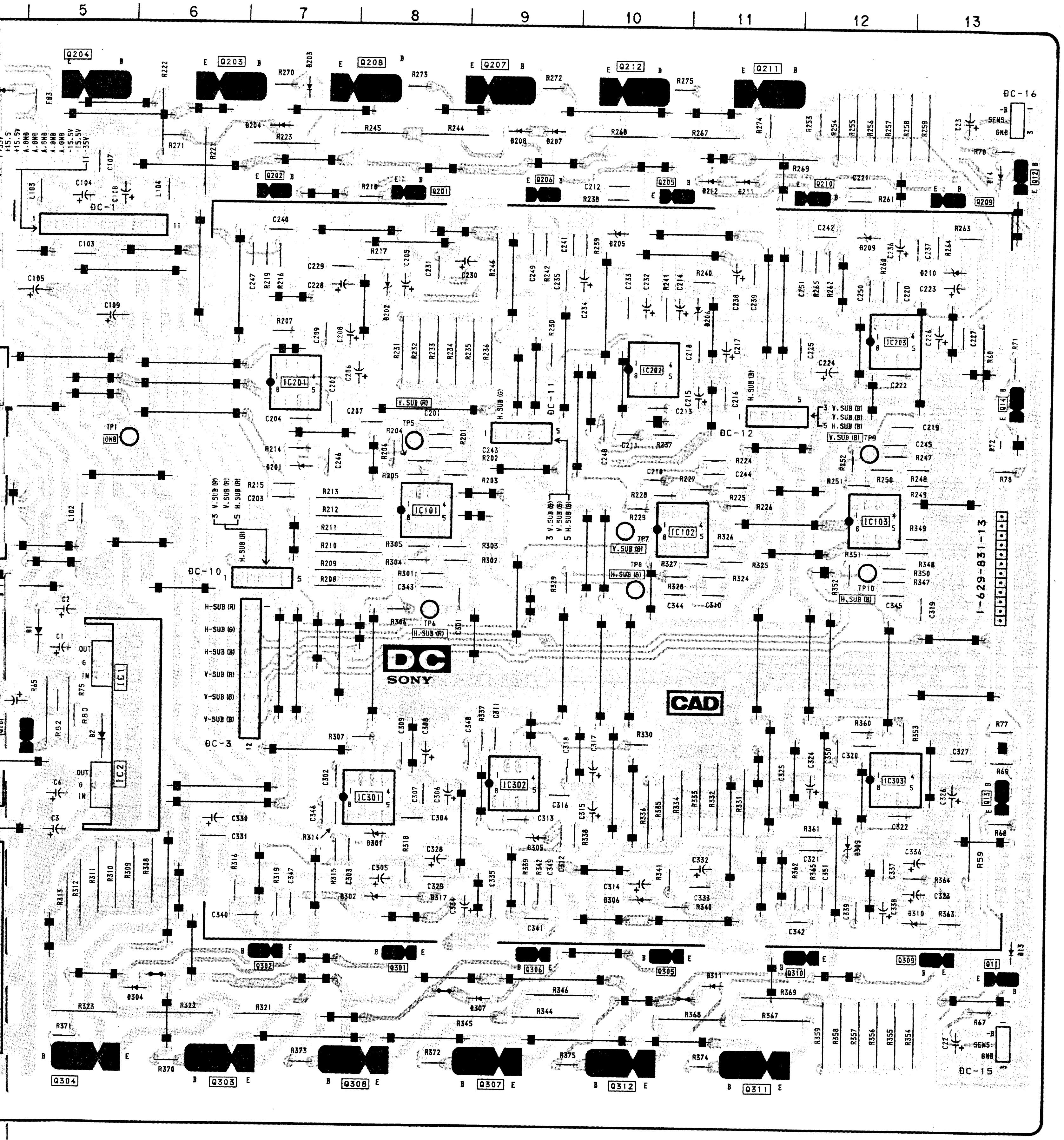
DC	IC1	µPC7812H	+12V REG	305	2SA1358	G-H SUB ACTIVE LOAD
	2	µPC77912H	–12V REG	306	2SC3421	G-H SUB DRIVE
	3	µPC4558C	R-V AMP	307	2SD1977	G-H SUB BUFF-1
	4	µPC1498H	R-V OUT	308	2SB1315	G-H SUB BUFF-2
	5	µPC4558C	G-V AMP	309	2SA1358	B-H SUB ACTIVE LOAD
	6	µPC1498H	G-V OUT	310	2SC3421	B-H SUB DRIVE
	7	µPC4558C	B-V AMP	311	2SD1977	B-H SUB BUFF-1
	8	µPC1498H	B-V OUT	312	2SB1315	B-H SUB BUFF-2
	9	µPC4558C	V.PULSE GEN			
	101	µPC814C	R-SUB AMP	D1	V06C	+12V REG PROT
	102	µPC814C	G-SUB AMP	2	V06C	–12V REG PROT
	103	µPC814C	B-SUB AMP	3	V06C	PULSE CHARGE-1
	201	LM6364N	R-V SUB PRE DRIVE	4	1SS119	GATE-1
	202	LM6364N	G-V SUB PRE DRIVE	5	V06C	Pulse CHARGE-2
	203	LM6364N	B-V SUB PRE DRIVE	6	1SS119	GATE-2
	301	LM6364N	R-H SUB PRE DRIVE	7	V06C	PULSE CHARGE-3
	302	LM6364N	G-H SUB PRE DRIVE	8	1SS119	GATE-3
	303	LM6364N	B-H SUB PRE DRIVE	9	1SS119	GATE-4
				10	1SS119	GATE-5
	Q1	2SC2785	V.Pulse DET-1	11	1SS119	PROT-1
	2	2SC2785	V.Pulse DET-2	12	1SS119	GATE-6
	3	2SC2785	V.Pulse DET-3	13	1SS119	PROT-2
	4	DTC144ES	V.STOP CONT SW-1	14	1SS119	
	5	DTC144ES	V.STOP CONT SW-2	15	1SS119	DISCHARGE-1
	6	2SC2785	V.Pulse BUFF	16	1SS119	DISCHARGE-2
	7	DTC144ES	V.INV SW	101	1SS119	CLAMP-1
	8	DTC144ES	FAN STOP-1	102	ERC88-009	+P VOLT GATE-1
	9	2SA1358	+15V CORRENT PROT	103	ERC88-009	+P VOLT GATE-2
	10	2SC3421	–15V CORRENT PROT	104	1SS119	CLAMP-2
	11	DTC144ES	FAN STOP-2	105	ERC88-009	–P VOLT GATE-1
	12	DTC144ES		106	ERC88-009	–P VOLT GATE-2
	13	DTC144ES	FAN STOP-3	201	RD15ES-B2	LEVEL SHIFT
	101	2SC2785	AD HD BUFF-1	202	RD3.3ES-B2	BIAS
	102	2SK523	AD HD SW	203	1SS119	R-V BIAS-1
	103	2SC2785	BUFF-1	204	1SS119	R-V BIAS-2
	104	2SA1175	BUFF-2	205	RD15ES-B2	LEVEL SHIFT
	105	2SJ143	+35V SW	206	RD3.3ES-B2	BIAS
	106	2SC2785	AD HD BUFF-2	207	1SS119	G-V BIAS-1
	107	2SA1175	AD HD BUFF-3	208	1SS119	G-V BIAS-2
	108	2SK817	–35V SW	209	RD15ES-B2	LEVEL SHIFT
	201	2SA1358	R-V SUB ACTIVE LOAD	210	RD3.3ES-B2	BIAS
	202	2SC3421	R-V SUB DRIVE	211	1SS119	B-V BIAS-1
	203	2SD1977	R-V SUB BUFF-1	212	1SS119	B-V BIAS-2
	204	2SB1315	R-V SUB BUFF-2	301	RD15ES-B2	LEVEL SHIFT
	205	2SA1358	G-V SUB ACTIVE LOAD	302	RD3.3ES-B2	BIAS
	206	2SC3421	G-V SUB DRIVE	303	1SS119	R-H BIAS-1
	207	2SD1977	G-V SUB BUFF-1	304	1SS119	R-H BIAS-2
	208	2SB1315	G-V SUB BUFF-2	305	RD15ES-B2	LEVEL SHIFT
	209	2SA1358	B-V SUB ACTIVE LOAD	306	RD3.3ES-B2	BIAS
	210	2SC3421	B-V SUB DRIVE	307	1SS119	G-H BIAS-1
	211	2SD1977	B-V SUB BUFF-1	308	1SS119	G-H BIAS-2
	212	2SB1315	B-V SUB BUFF-2	309	RD15ES-B2	LEVEL SHIFT
	301	2SA1358	R-H SUB ACTIVE LOAD	310	RD3.3ES-B2	BIAS
	302	2SC3421	R-H SUB DRIVE	311	1SS119	B-H BIAS-1
	303	2SD1977	R-H SUB BUFF-1	312	1SS119	B-H BIAS-2
	304	2SB1315	R-H SUB BUFF-2			

– DC BOARD –

DC [V. OUT, H/V SUB OUT]


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
DC
SONY
CAD
1-629-831-13
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC101
IC102
IC103
IC201
IC202
IC203
IC301
IC302
IC303
DC-1
DC-2
DC-3
DC-4
DC-5
DC-6
DC-7
DC-8
DC-9
DC-10
DC-11
DC-12
DC-13
DC-14
DC-15
DC-16
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
V.BY (R)
INV.SENS.
INV.SENS.
V.BY (R)

DC [V. OUT, H/V SUB OUT]

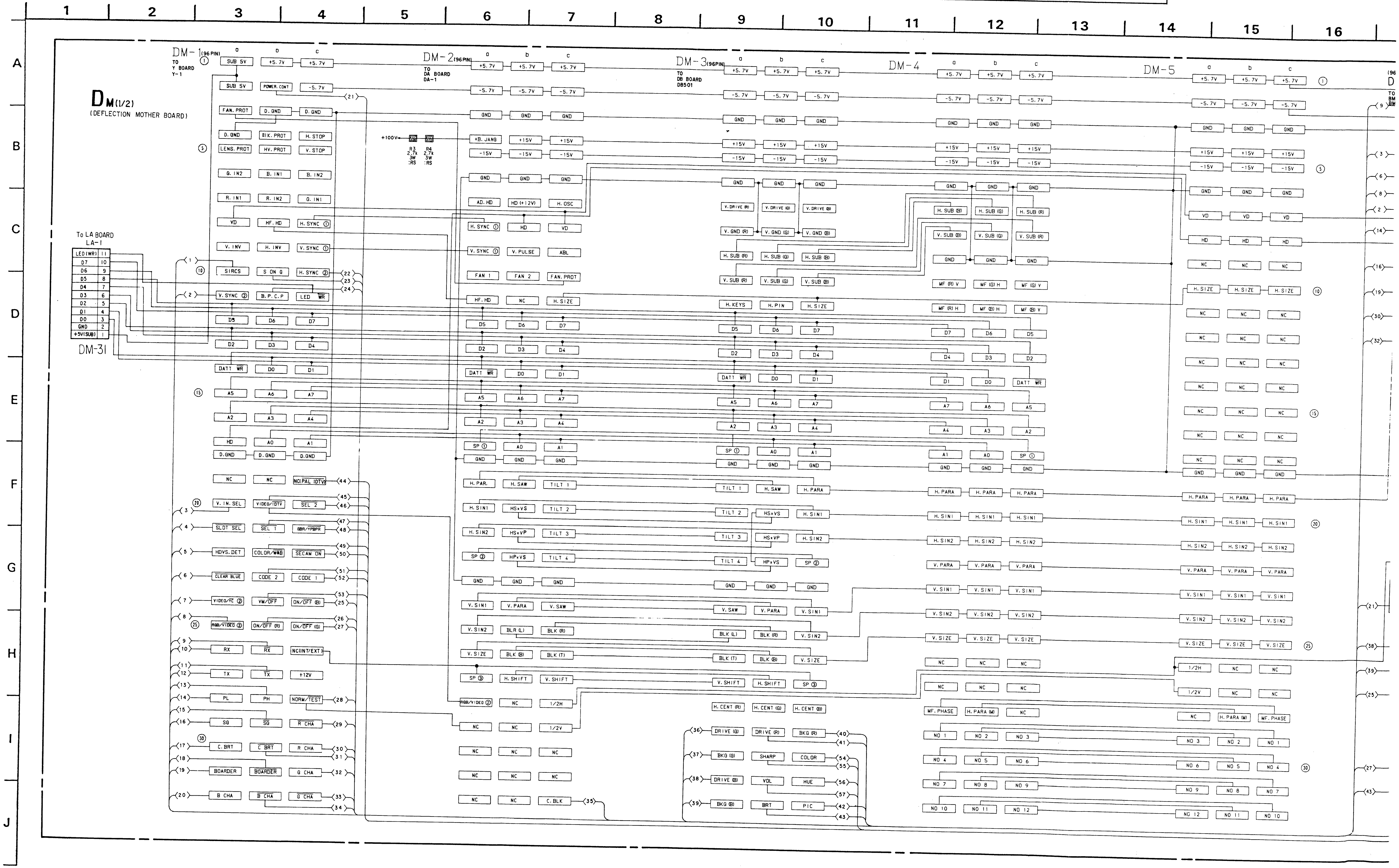

5
6
7
8
9
10
11
12
13
IC1
IC2
IC101
IC102
IC103
IC201
IC202
IC203
IC301
IC302
IC303
Q11
Q12
Q13
Q14
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
ĐC-1
ĐC-3
ĐC-10
ĐC-11
ĐC-12
ĐC-15
ĐC-16
TP1
GND
TP4
TP5
TP6
TP7
TP8
TP9
TP10
V.SUB (R)
V.SUB (B)
H.SUB (R)
H.SUB (B)
H-SUB (R)
H-SUB (B)
H-SUB (G)
V-SUB (G)
V-SUB (R)
V-SUB (B)
SENS.
GND
DC
SONY
CAD
1-629-831-13

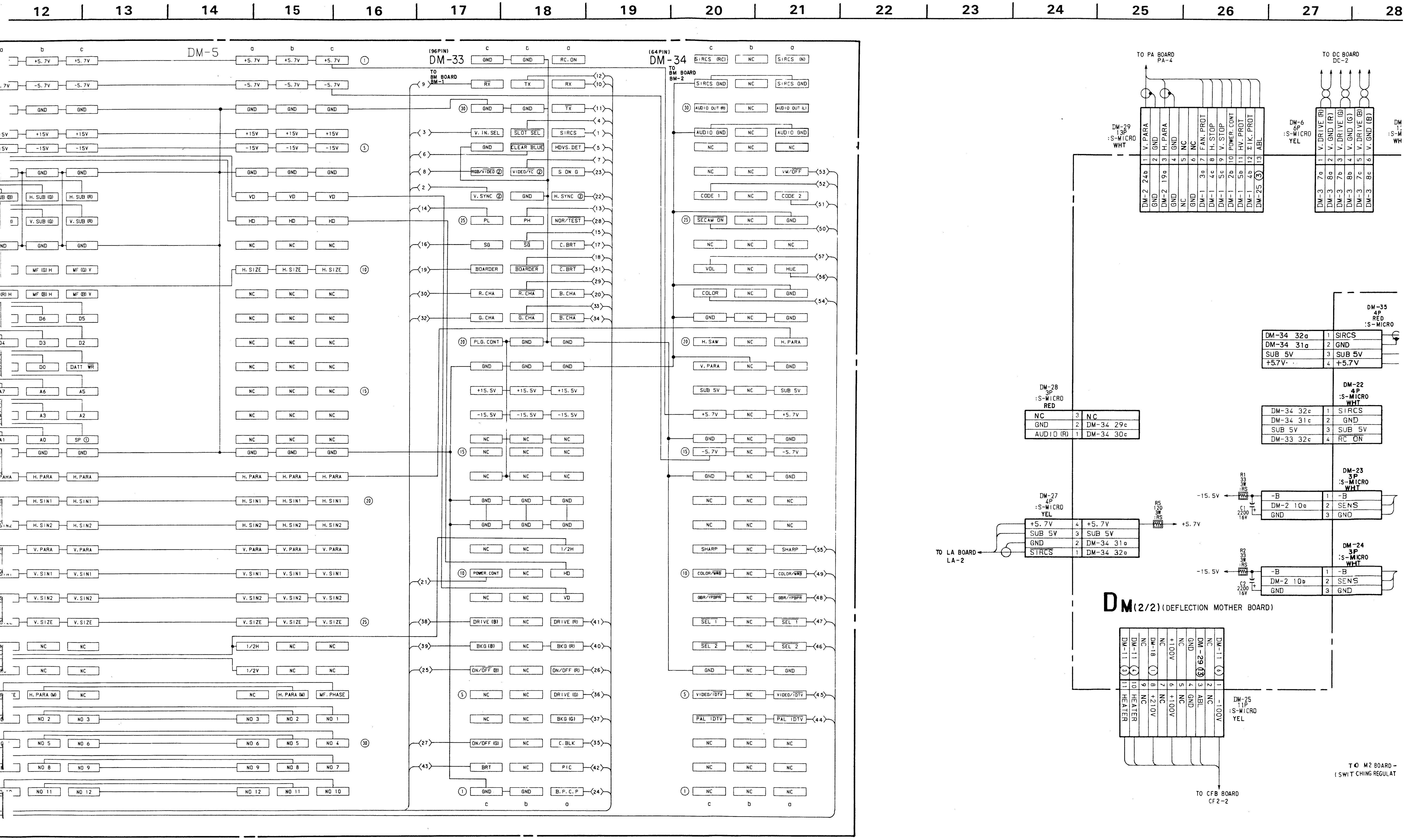
DC BOARD

IC	
IC1	F - 5
IC2	G - 5
IC3	I - 2
IC4	I - 4
IC5	G - 2
IC6	G - 4
IC7	E - 2
IC8	D - 4
IC9	D - 3
IC101	E - 8
IC102	E - 10
IC103	E - 12
IC201	D - 7
IC202	D - 10
IC203	C - 12
IC301	G - 8
IC302	G - 9
IC303	G - 12

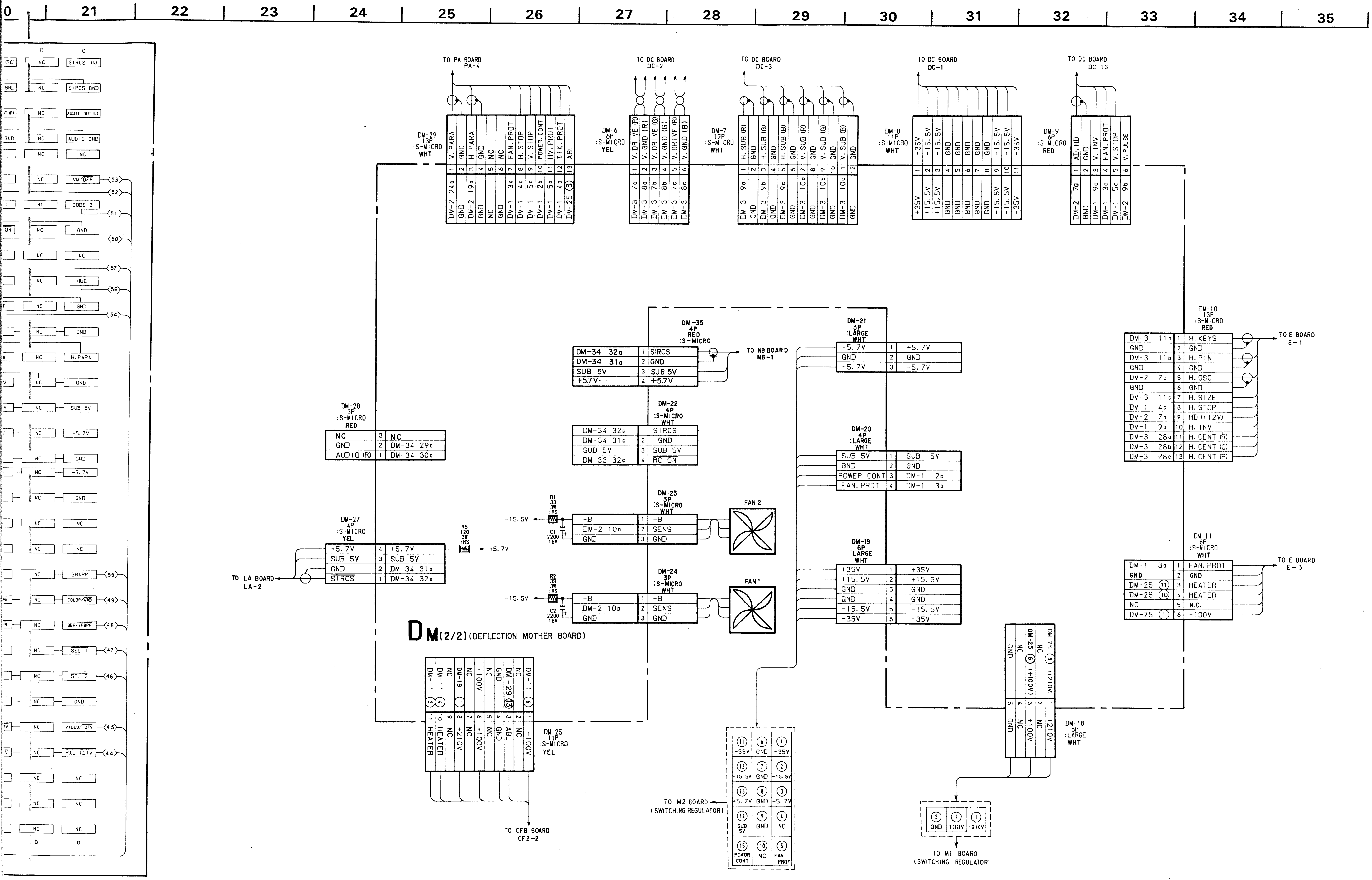
TRANSISTOR	
Q1	I - 1
Q2	G - 1
Q3	F - 2
Q4	C - 2
Q5	D - 2
Q6	D - 2
Q7	H - 2
Q8	F - 1
Q9	B - 2
Q10	G - 4
Q11	I - 13
Q12	B - 12
Q13	G - 13
Q101	B - 2
Q102	A - 1
Q103	A - 2
Q104	A - 2
Q105	A - 2
Q106	B - 2
Q107	B - 2
Q108	A - 3
Q201	B - 8
Q202	B - 7
Q203	A - 6
Q204	A - 5
Q205	B - 10
Q206	B - 9
Q207	A - 9
Q208	A - 7
Q209	B - 12
Q210	B - 11
Q211	A - 11
Q212	A - 10
Q301	I - 8
Q302	I - 7
Q303	J - 6
Q304	J - 5
Q305	I - 10
Q306	I - 9
Q307	J - 9
Q308	J - 8
Q309	I - 13
Q310	I - 12
Q311	J - 11
Q312	J - 10

DIODE	
D1	F - 5
D2	G - 5
D3	I - 3
D4	I - 2
D5	F - 3
D6	G - 2
D7	D - 3
D8	F - 2
D9	D - 2
D10	D - 3
D11	F - 1
D12	C - 2
D13	I - 13
D14	B - 12
D15	B - 2
D16	E - 2
D101	A - 2
D102	A - 3
D103	B - 3
D104	A - 4
D105	A - 4
D106	C - 4
D201	D - 7
D202	C - 8
D203	A - 7
D204	A - 7
D205	B - 10
D206	C - 10
D207	A - 9
D208	A - 9
D209	B - 13
D210	C - 13
D211	B - 11
D212	B - 11
D301	H - 8
D302	H - 8
D303	I - 6
D304	I - 6
D305	H - 9
D306	H - 10
D307	I - 9
D308	I - 8
D309	H - 12
D310	I - 12
D311	I - 11
D312	I - 10


D M (1/2)
(DEFLECTION MOTHER BOARD)
DM-1 (96PIN)
TO Y BOARD Y-1
DM-2 (96PIN)
TO DA BOARD DA-1
DM-3 (96PIN)
TO DB BOARD DB501
DM-4
DM-5
To LA BOARD LA-1
DM-31
LED(WR) 11
D7 10
D6 9
D5 8
D4 7
D3 6
D2 5
D1 4
D0 3
GND 2
+5V(SUB) 1
+100V
R3 2.7k 3W :RS
R4 2.7k 3W :RS
a
b
c
SUB 5V
+5.7V
-5.7V
POWER CONT
FAN. PROT
D. GND
EIK. PROT
H. STOP
LENS. PROT
HV. PROT
V. STOP
G. IN2
B. IN1
B. IN2
R. IN1
R. IN2
G. IN1
VD
HF. HD
H. SYNC ①
V. INV
H. INV
V. SYNC ①
SIRCS
S ON G
H. SYNC ②
V. SYNC ②
B. P. C. P
LED WR
D5
D6
D7
D2
D3
D4
DATT WR
D0
D1
A5
A6
A7
A2
A3
A4
HD
A0
A1
D.GND
NC
NC(PAL IDTV)
V. IN. SEL
VIDEO/IDTV
SEL 2
SLOT SEL
SEL 1
GBR/YPBPR
HDVS. DET
COLOR/W&B
SECAM ON
CLEAR BLUE
CODE 2
CODE 1
VIDEO/YC ②
VM/OFF
ON/OFF (B)
RGB/VIDEO ②
ON/OFF (R)
ON/OFF (G)
RX
NC(INT/EXT)
TX
+12V
PL
PH
NORM/TEST
SG
R CHA
C. BRT
BOARDER
G CHA
B CHA
GND
+B. JANG
+15V
-15V
AD. HD
HD (+12V)
H. OSC
V. PULSE
ABL
FAN 1
FAN 2
FAN. PROT
HF. HD
H. SIZE
SP ①
SP ②
SP ③
H. PAR.
H. SAW
TILT 1
H. SIN1
HS×VS
TILT 2
H. SIN2
HS×VP
TILT 3
HP×VS
TILT 4
V. SIN1
V. PARA
V. SAW
V. SIN2
BLR (L)
BLK (R)
V. SIZE
BLK (B)
BLK (T)
H. SHIFT
V. SHIFT
1/2H
1/2V
C. BLK
V. DRIVE (R)
V. DRIVE (G)
V. DRIVE (B)
V. GND (R)
V. GND (G)
V. GND (B)
H. SUB (R)
H. SUB (G)
H. SUB (B)
V. SUB (R)
V. SUB (G)
V. SUB (B)
H. KEYS
H. PIN
H. PARA
H. CENT (R)
H. CENT (G)
H. CENT (B)
DRIVE (G)
DRIVE (R)
BKG (R)
BKG (G)
SHARP
COLOR
DRIVE (B)
VOL
HUE
BKG (B)
BRT
PIC
MF (R) V
MF (G) H
MF (G) V
MF (R) H
MF (B) H
MF (B) V
MF. PHASE
H. PARA (M)
NO 1
NO 2
NO 3
NO 4
NO 5
NO 6
NO 7
NO 8
NO 9
NO 10
NO 11
NO 12
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J

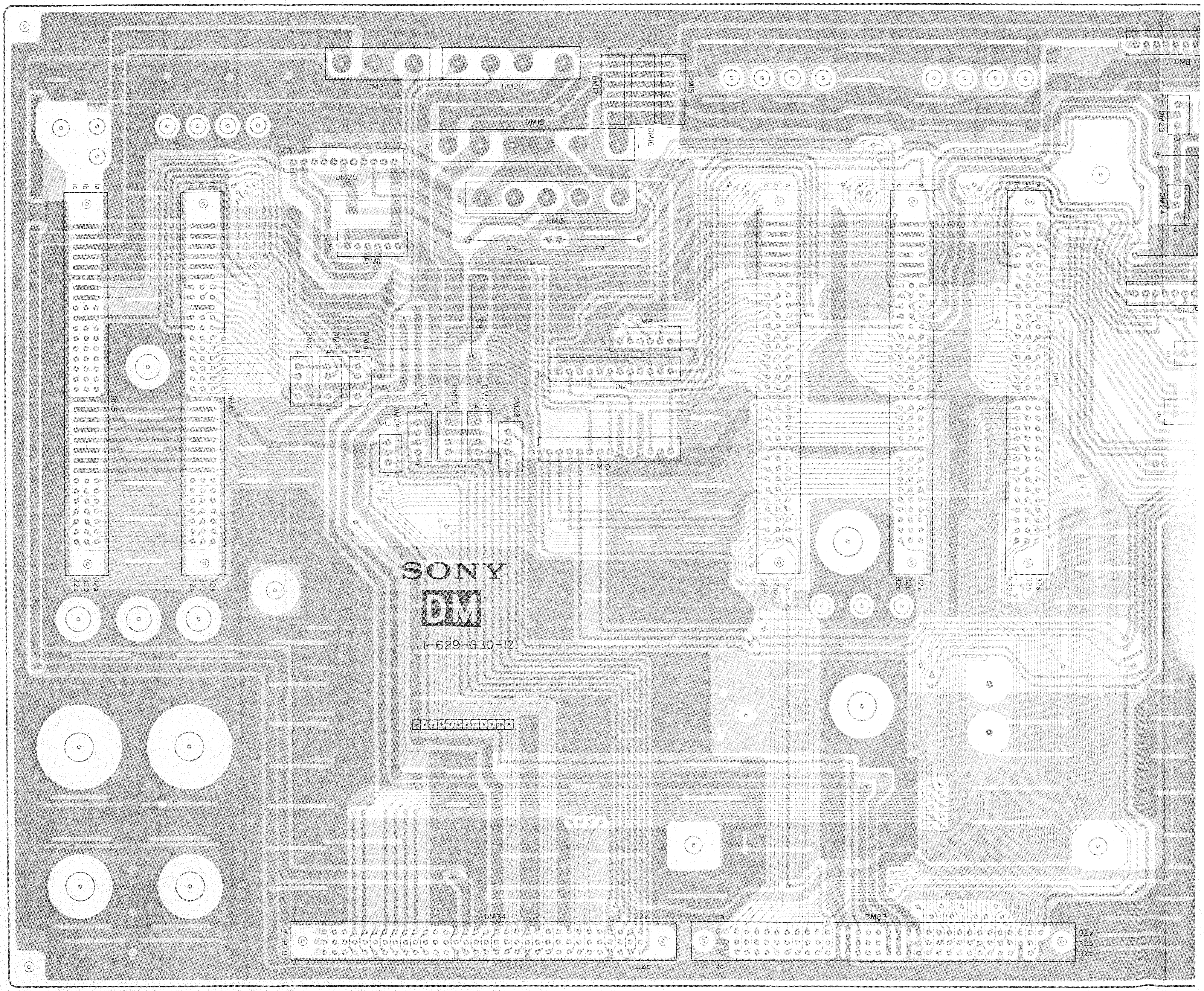

12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
DM-5
(96PIN) DM-33
TO BM BOARD BM-1
(64PIN) DM-34
TO BM BOARD BM-2
TO PA BOARD PA-4
DM-29 13P :S-MICRO WHT
TO DC BOARD DC-2
DM-6 6P :S-MICRO YEL
DM-35 4P RED :S-MICRO
DM-22 4P :S-MICRO WHT
DM-28 3P :S-MICRO RED
DM-23 3P :S-MICRO WHT
DM-27 4P :S-MICRO YEL
TO LA BOARD LA-2
DM-24 3P :S-MICRO WHT
DM-25 11P :S-MICRO YEL
TO CFB BOARD CF2-2
TO M2 BOARD - (SWITCHING REGULAT
R1 33 3W :RS
C1 2200 16V
R5 120 3W :RS
R2 33 3W :RS
C2 2200 16V
-15.5V
+5.7V

DM(2/2)(DEFLECTION MOTHER BOARD)

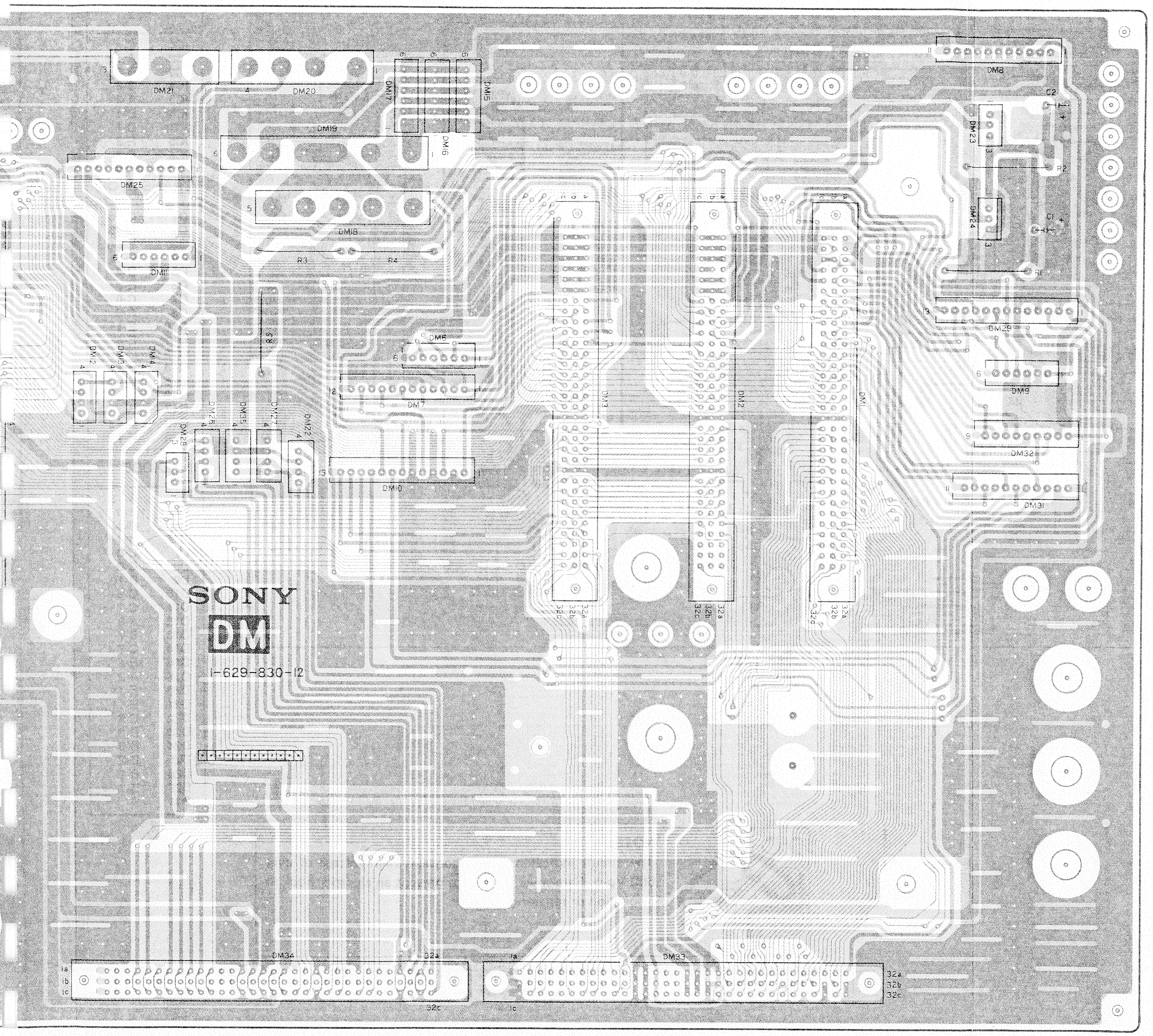

0
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
DM(2/2)(DEFLECTION MOTHER BOARD)
TO PA BOARD PA-4
TO DC BOARD DC-2
TO DC BOARD DC-3
TO DC BOARD DC-1
TO DC BOARD DC-13
DM-29 13P :S-MICRO WHT
DM-6 6P :S-MICRO YEL
DM-7 12P :S-MICRO WHT
DM-8 11P :S-MICRO WHT
DM-9 6P :S-MICRO RED
DM-10 13P :S-MICRO RED
DM-11 6P :S-MICRO WHT
DM-18 5P :LARGE WHT
DM-19 6P :LARGE WHT
DM-20 4P :LARGE WHT
DM-21 3P :LARGE WHT
DM-22 4P :S-MICRO WHT
DM-23 3P :S-MICRO WHT
DM-24 3P :S-MICRO WHT
DM-25 11P :S-MICRO YEL
DM-27 4P :S-MICRO YEL
DM-28 3P :S-MICRO RED
DM-35 4P RED :S-MICRO
TO E BOARD E-1
TO E BOARD E-3
TO NB BOARD NB-1
TO LA BOARD LA-2
TO CFB BOARD CF2-2
TO M2 BOARD (SWITCHING REGULATOR)
TO MI BOARD (SWITCHING REGULATOR)
FAN 1
FAN 2
R1 33 3W :RS
R2 33 3W :RS
R5 120 3W :RS
C1 2200 16V
C2 2200 16V
-15.5V
+5.7V
V. PARA
H. PARA
FAN. PROT
H. STOP
V. STOP
POWER. CONT
HV. PROT
ΣIK. PROT
ABL
V. DRIVE (R)
V. GND (R)
V. DRIVE (G)
V. GND (G)
V. DRIVE (B)
V. GND (B)
H. SUB (R)
H. SUB (G)
H. SUB (B)
V. SUB (R)
V. SUB (G)
V. SUB (B)
+35V
+15.5V
-15.5V
-35V
AD. HD
V. INV
V. PULSE
H. KEYS
H. PIN
H. OSC
H. SIZE
HD (+12V)
H. INV
H. CENT (R)
H. CENT (G)
H. CENT (B)
HEATER
N.C.
-100V
+100V
+210V
SIRCS
SUB 5V
RC ON
AUDIO (R)
NC
GND
SIRCS (N)
SIRCS GND
AUDIO OUT (L)
AUDIO GND
VM/OFF
CODE 2
HUE
H. PARA
SHARP
COLOR/W/B
BBR/YPBPR
SEL 1
SEL 2
VIDEO/IDTV
PAL IDTV
-5.7V
POWOR CONT
FAN PROT

DM [DEFLECTION MOTHER BOARD]

– DM BOARD –


DM21
DM20
DM17
DM16
DM5
DM19
DM25
DM18
DM11
DM15
DM4
DM2
DM3
DM14
DM6
DM7
DM10
DM29
DM13
DM12
DM22
DM1
DM8
DM23
DM24
DM34
DM33
R3
R4
R5
1a
1b
1c
32a
32b
32c
SONY
DM
1-629-830-12

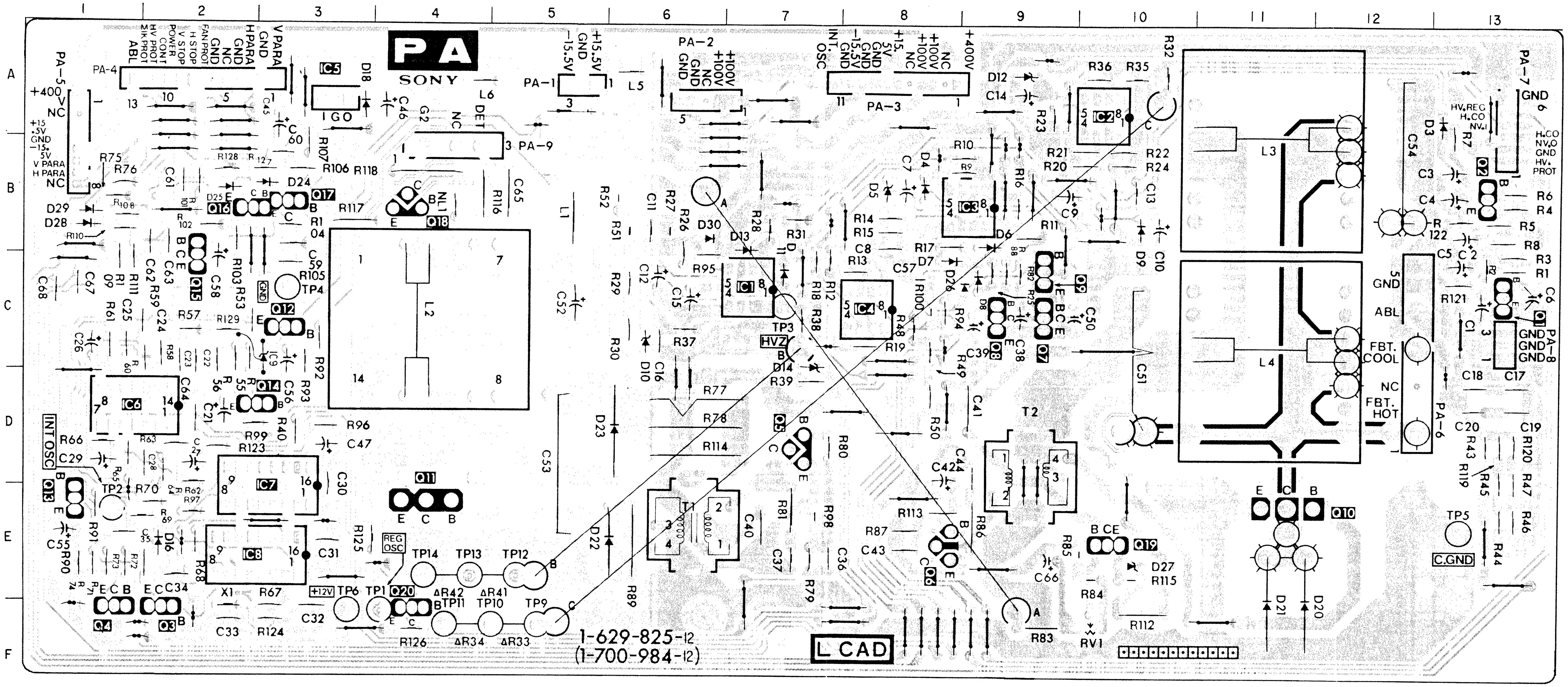
DM [DEFLECTION MOTHER BOARD]


DM21
DM20
DM17
DM15
DM19
DM16
DM25
DM18
DM11
R3
R4
DM8
C2
DM23
R2
DM24
C1
R1
DM29
DM9
DM32
DM31
DM6
DM7
DM10
DM12
DM13
DM14
DM26
DM28
DM27
DM22
R5
DM3
DM2
DM1
SONY
DM
1-629-830-12
DM34
DM33
1a
1b
1c
32a
32b
32c

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

PA [HIGH VOLTAGE REG]

– PA BOARD –


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
PA
SONY
PA-1
PA-2
PA-3
PA-4
PA-5
PA-6
PA-7
PA-8
PA-9
+400V
NC
+15.5V
GND
-15.5V
V PARA
H PARA
ABL
HV PROT
FAN PROT
H STOP
V STOP
POWER
+100V
INT. OSC
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
L1
L2
L3
L4
L5
L6
T1
T2
TP1
TP2
TP3
TP4
TP5
TP6
TP9
TP10
TP11
TP12
TP13
TP14
HVZ
REG OSC
+12V
INT OSC
GND
ABL
FBT. COOL
NC
FBT. HOT
HV.REG
H.CO
NV.I
HV. PROT
C.GND
RV1
X1
DET
Q10
Q11
Q19
Q20
E C B
1-629-825-12
(1-700-984-12)
L CAD

PA BOARD

IC

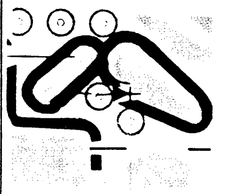
IC1	C-7
IC2	A-10
IC3	B-9
IC4	C-8
IC5	A-3
IC6	D-1
IC7	D-3
IC8	E-3
IC9	C-3

TRANSISTOR

Q1	C-13
Q2	B-13
Q3	F-2
Q4	F-1
Q5	D-7
Q6	E-8
Q7	C-9
Q8	C-9
Q10	E-11
Q11	E-4
Q12	C-3
Q13	E-1
Q15	C-2
Q16	B-2
Q17	B-3
Q18	B-4
Q20	F-4

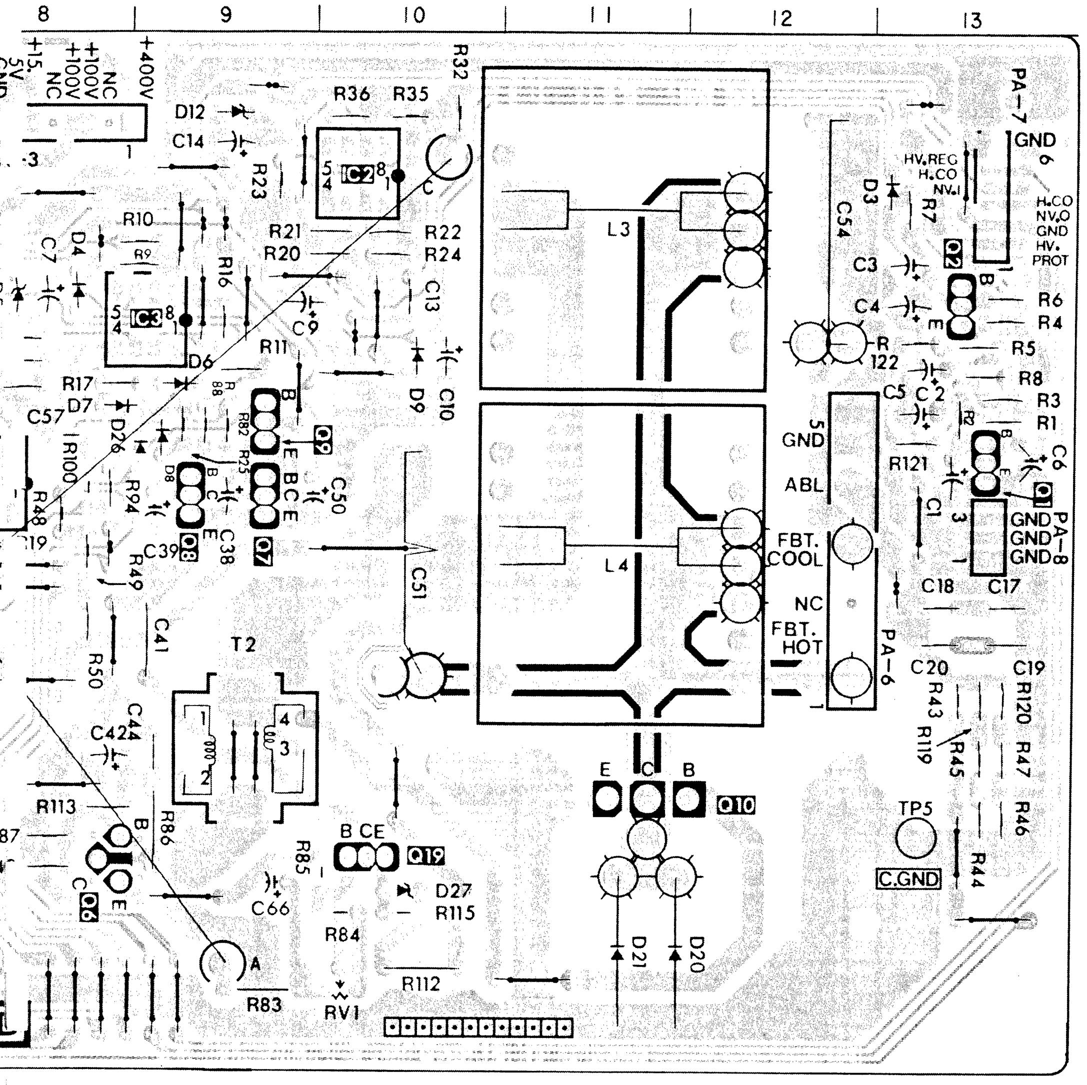
DIODE

D3	A-13
D4	B-8
D5	B-8
D6	B-9
D7	C-8
D8	C-9
D9	B-10
D10	C-6
D11	C-7
D12	A-9
D13	B-7
D14	C-7
D16	E-2
D18	A-3
D20	E-11
D21	E-11
D22	E-6
D23	D-6
D24	B-3
D25	B-2
D28	B-1
D29	B-1
D31	



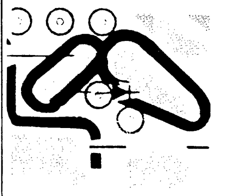
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

K [DYNAMIC FOCUS] **PB** [FBT]


8
9
10
11
12
13
+400V
+15.5V
+100V
+100V
NC
NC
GND
D12
C14
R36
R35
R32
IC2
R23
R10
R9
R21
R20
R22
R24
C13
C7
D4
IC3
R16
C9
L3
D6
R11
D9
C10
R17
D7
C57
D26
R88
R82
R25
Q6
Q8
Q7
C50
R100
R48
R94
C39
C38
C51
R49
C41
T2
L4
R50
C44
C42
R113
R86
R85
B CE
Q19
D27
R115
C66
R84
A
R83
RV1
R112
E
C
B
Q10
D21
D20
PA-7
GND
HV.REG
H.CO
NV.I
H.CO
NV.O
GND
HV.PROT
D3
C54
R7
Q2
C3
C4
R6
R4
R122
R5
R8
C5
C2
R3
R1
GND
ABL
R121
C6
C1
Q1
FBT.COOL
NC
FBT.HOT
GND
GND
GND
PA-8
C18
C17
PA-6
C20
C19
R43
R120
R119
R45
R47
TP5
C.GND
R46
R44

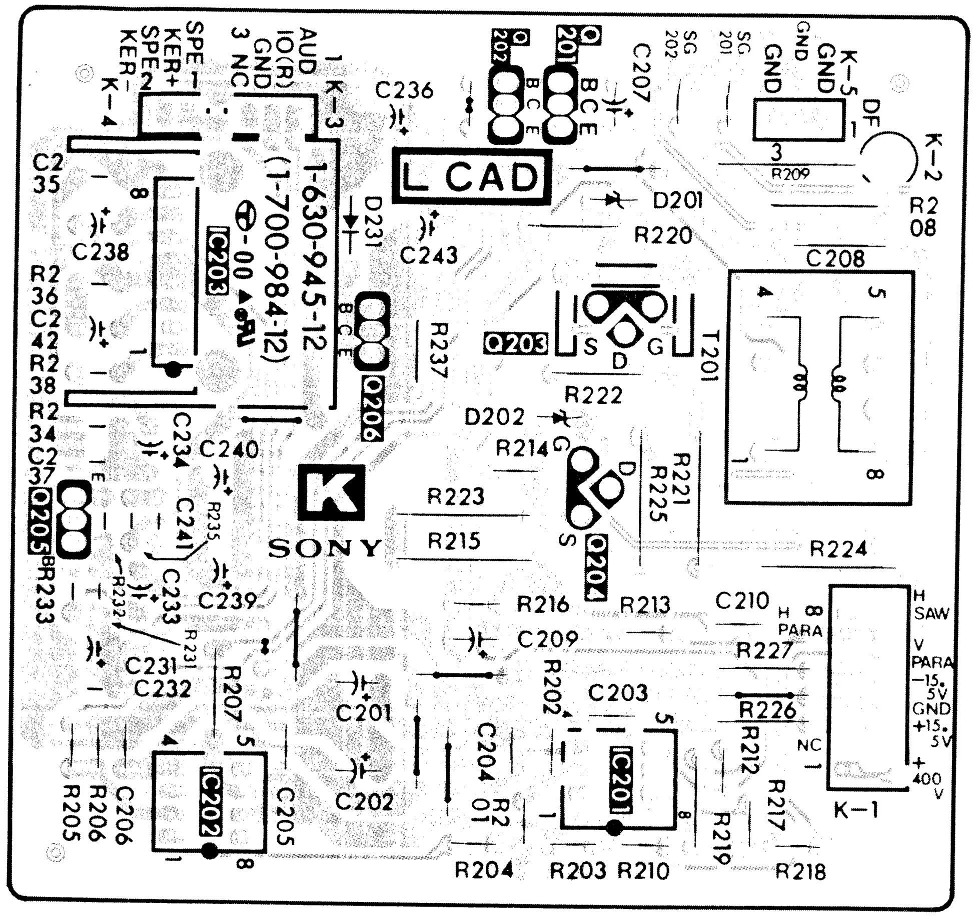
PA BOARD

IC	
IC1	C-7
IC2	A-10
IC3	B-9
IC4	C-8
IC5	A-3
IC6	D-1
IC7	D-3
IC8	E-3
IC9	C-3
TRANSISTOR	
Q1	C-13
Q2	B-13
Q3	F-2
Q4	F-1
Q5	D-7
Q6	E-8
Q7	C-9
Q8	C-9
Q10	E-11
Q11	E-4
Q12	C-3
Q13	E-1
Q15	C-2
Q16	B-2
Q17	B-3
Q18	B-4
Q20	F-4
DIODE	
D3	A-13
D4	B-8
D5	B-8
D6	B-9
D7	C-8
D8	C-9
D9	B-10
D10	C-6
D11	C-7
D12	A-9
D13	B-7
D14	C-7
D16	E-2
D18	A-3
D20	E-11
D21	E-11
D22	E-6
D23	D-6
D24	B-3
D25	B-2
D28	B-1
D29	B-1
D31	

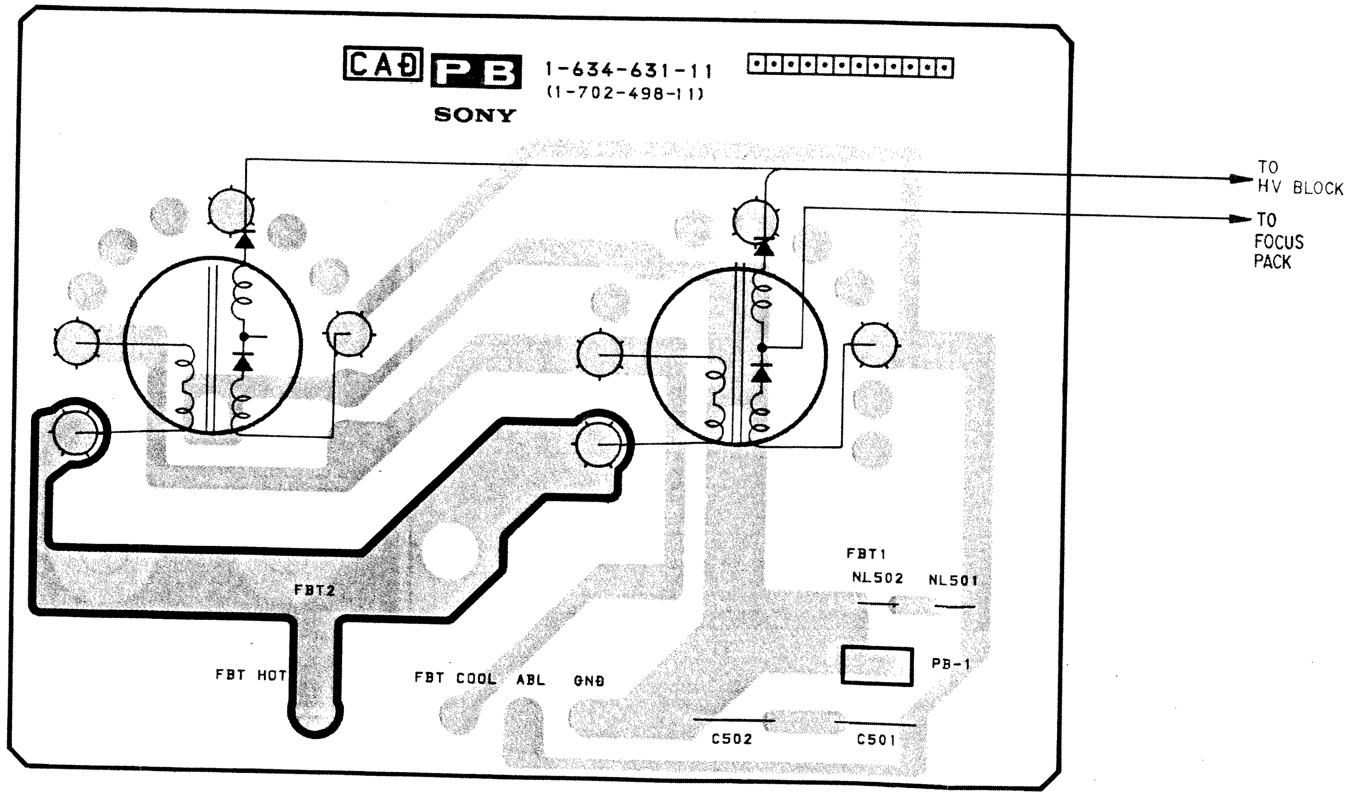


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

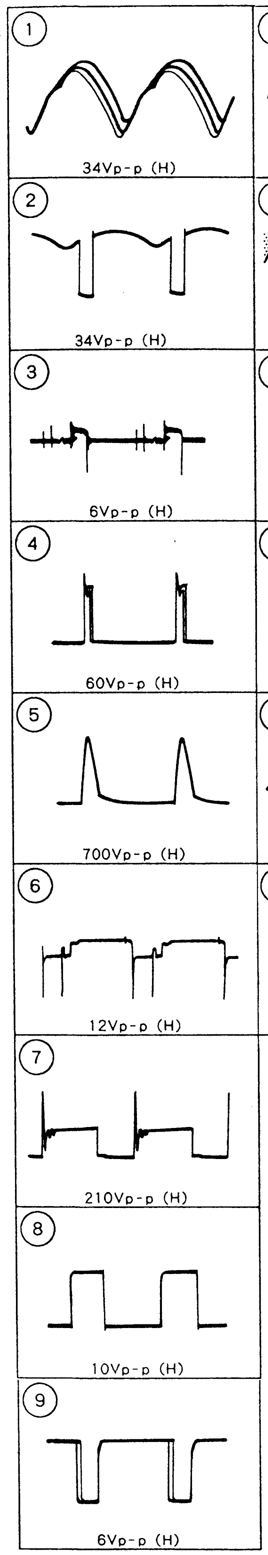
– K BOARD –


SPE-1
KER+
SPE-2
KER-
K-4
AUD
IO(R)
GND
3 NC
1 K-3
C236
Q202
Q201
B C E
C207
SG 202
SG 201
GND
GND
K-5
DF
K-2
C235
L CAD
1-630-945-12
(1-700-984-12)
IC203
D231
D201
R209
R208
R220
C208
C238
C243
R236
C242
R238
R234
C237
R237
Q203
Q206
S D G
T201
R222
D202
R214
C234
C240
R235
C241
K
SONY
R223
R215
R221
R225
Q204
R224
Q205
R233
R232
C233
C239
R216
R213
C210
H SAW
H PARA
V PARA
-15.5V
GND
+15.5V
+400V
R227
C209
C231
C232
R231
R207
C201
R202
C203
R226
R212
NC
C206
R206
R205
C202
IC202
C205
C204
R201
IC201
R219
R217
K-1
R204
R203
R210
R218

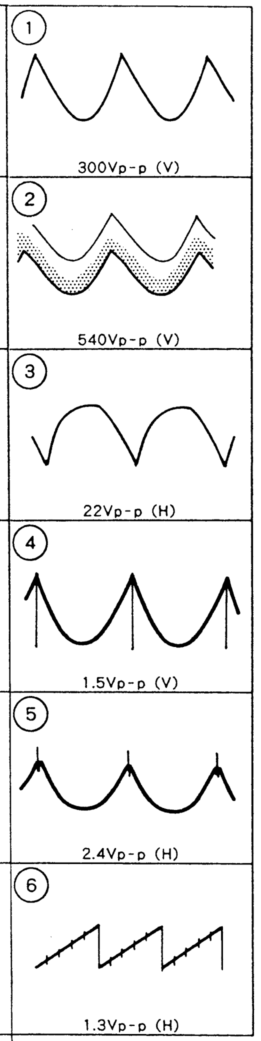
– PB BOARD –


CAD PB 1-634-631-11
(1-702-498-11)
SONY
TO HV BLOCK
TO FOCUS PACK
FBT2
FBT1
NL502
NL501
PB-1
FBT HOT
FBT COOL
ABL
GND
C502
C501

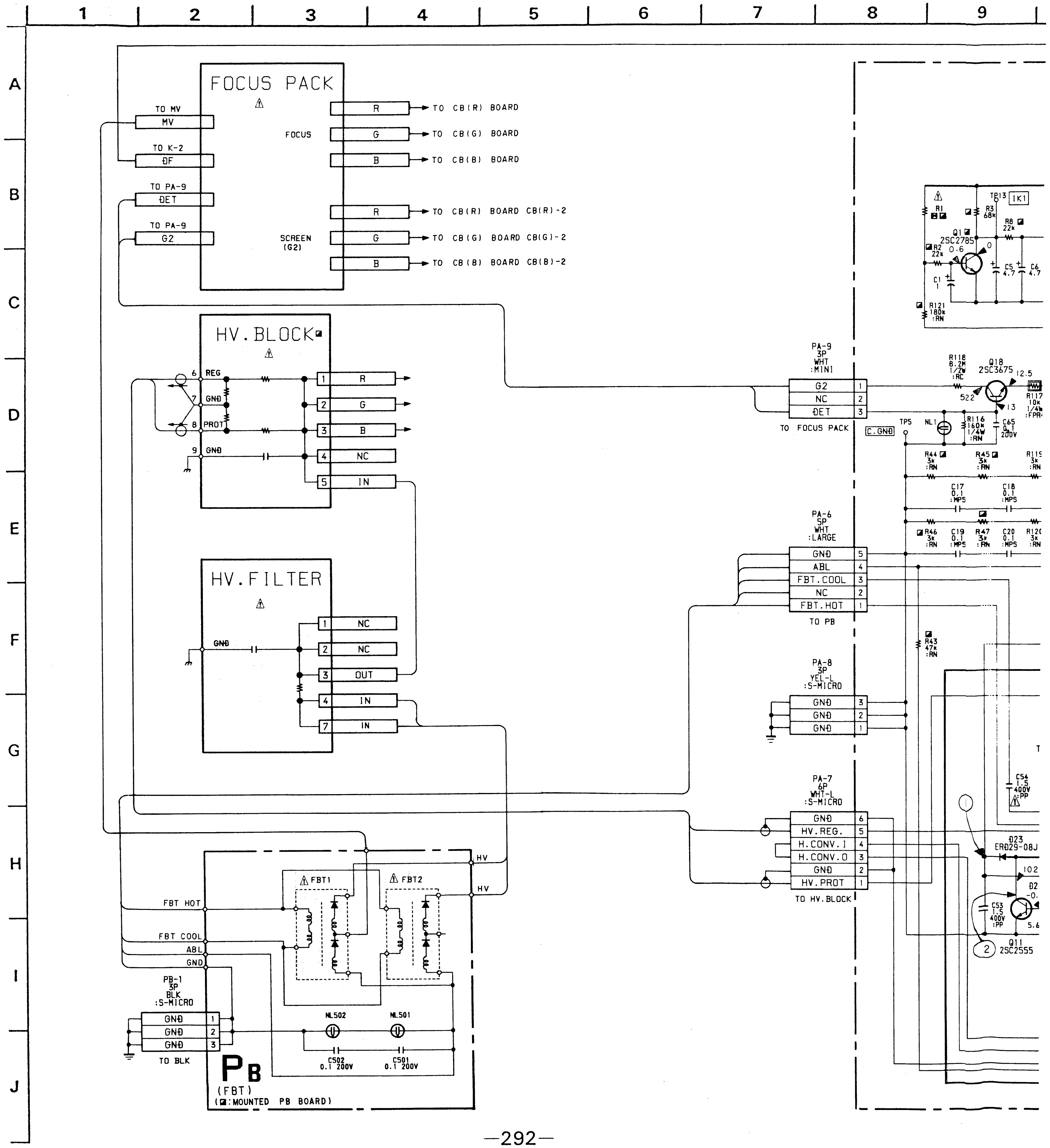
PA BOARD

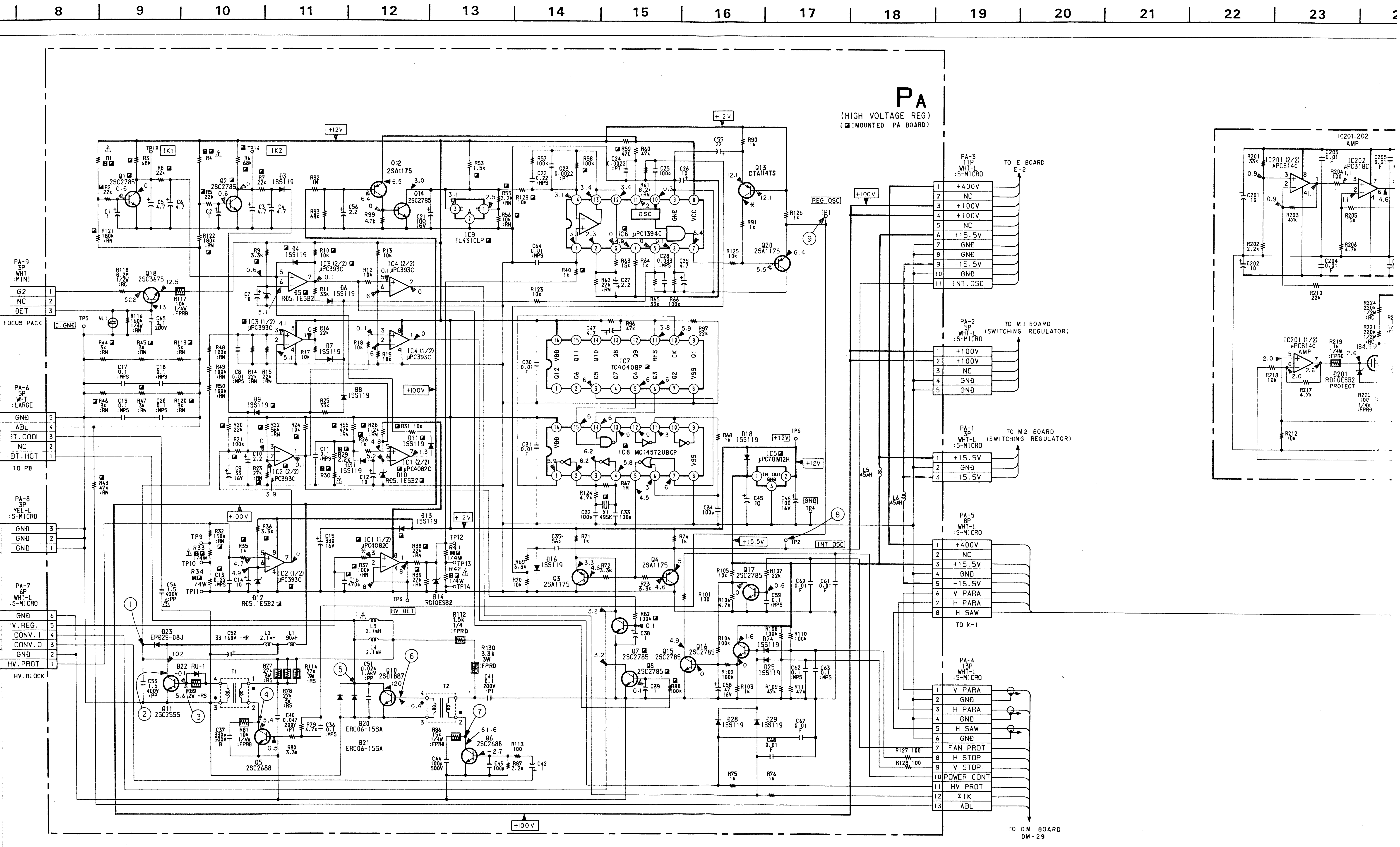


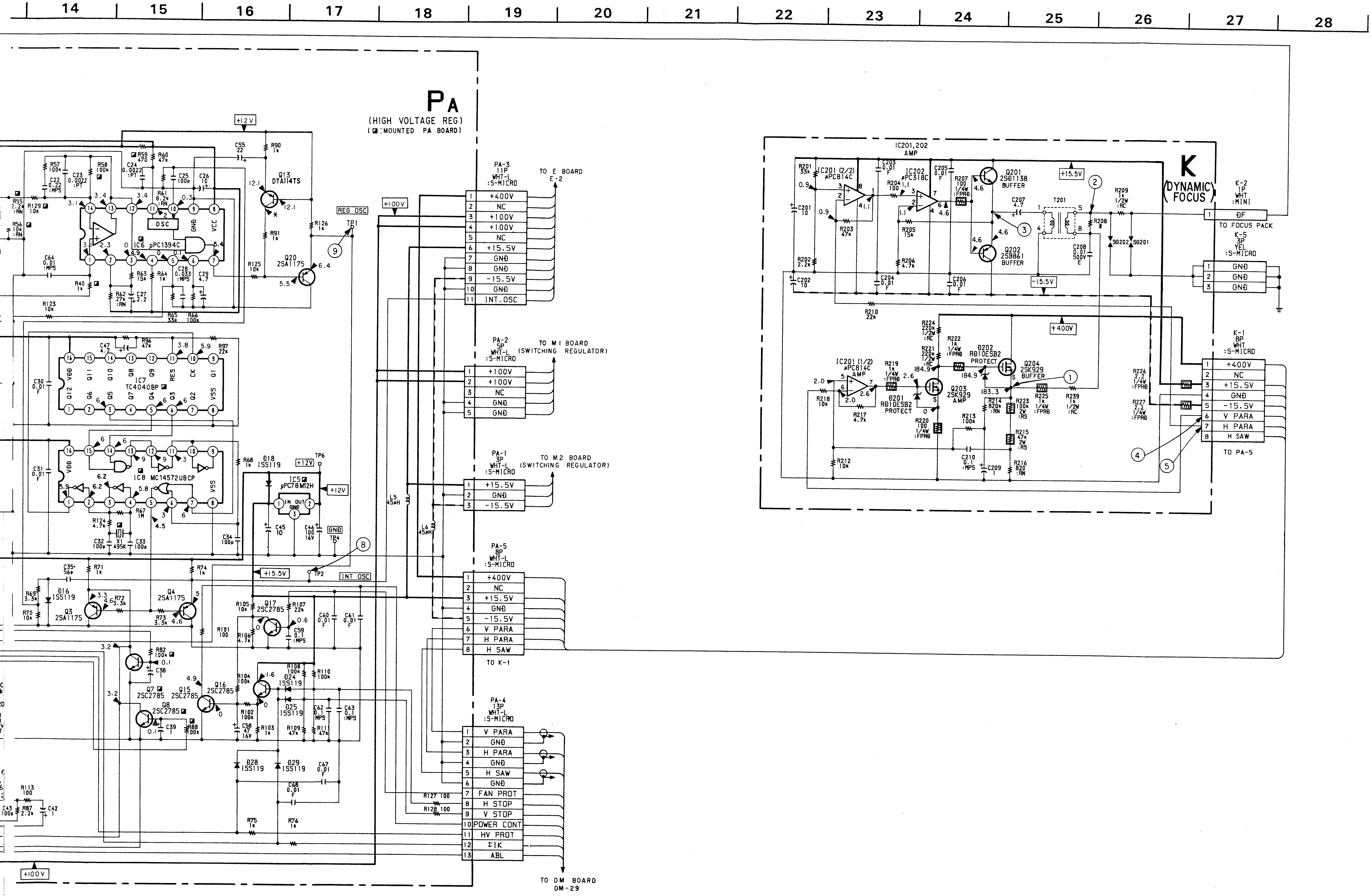
K BOARD

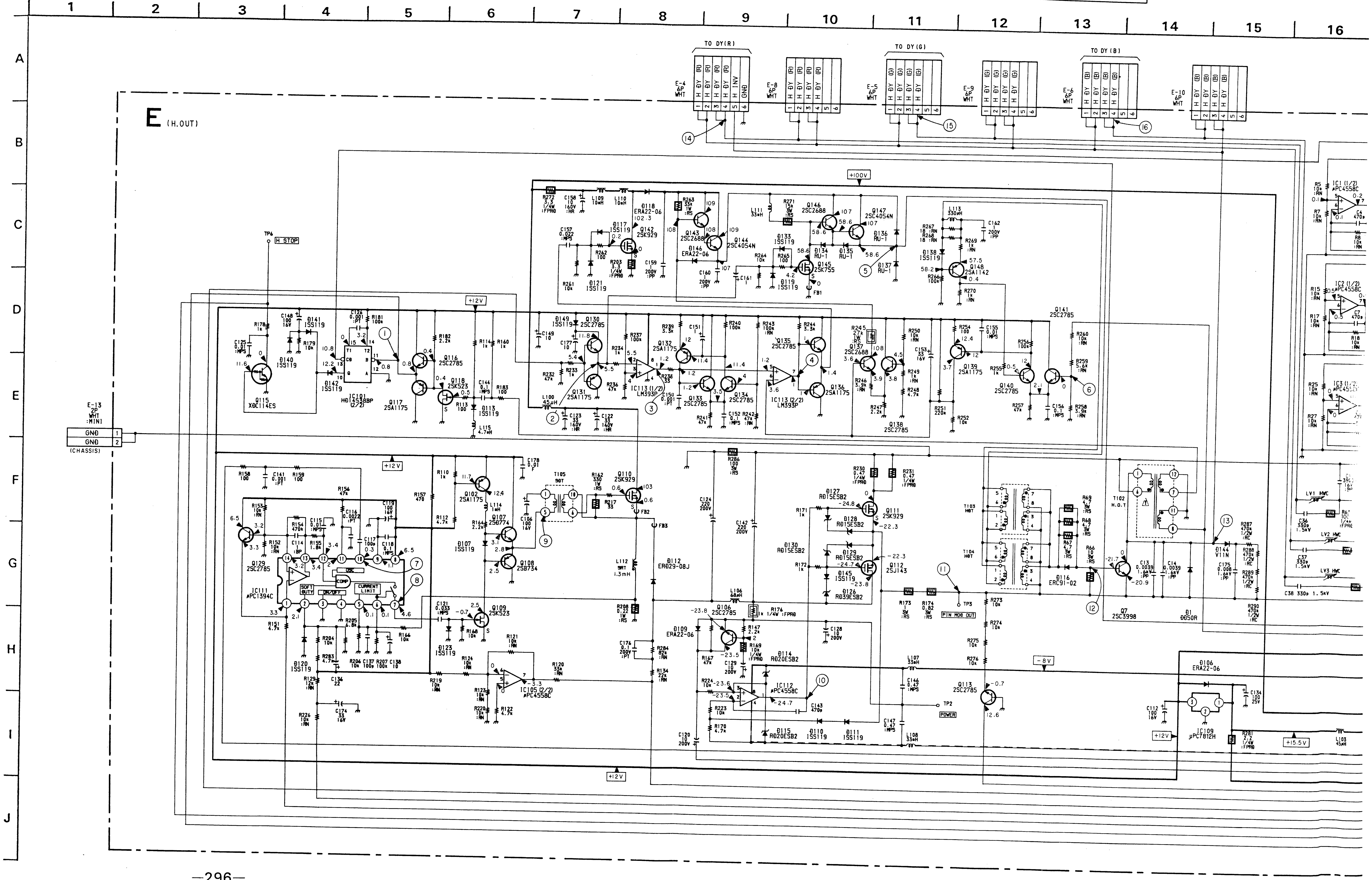


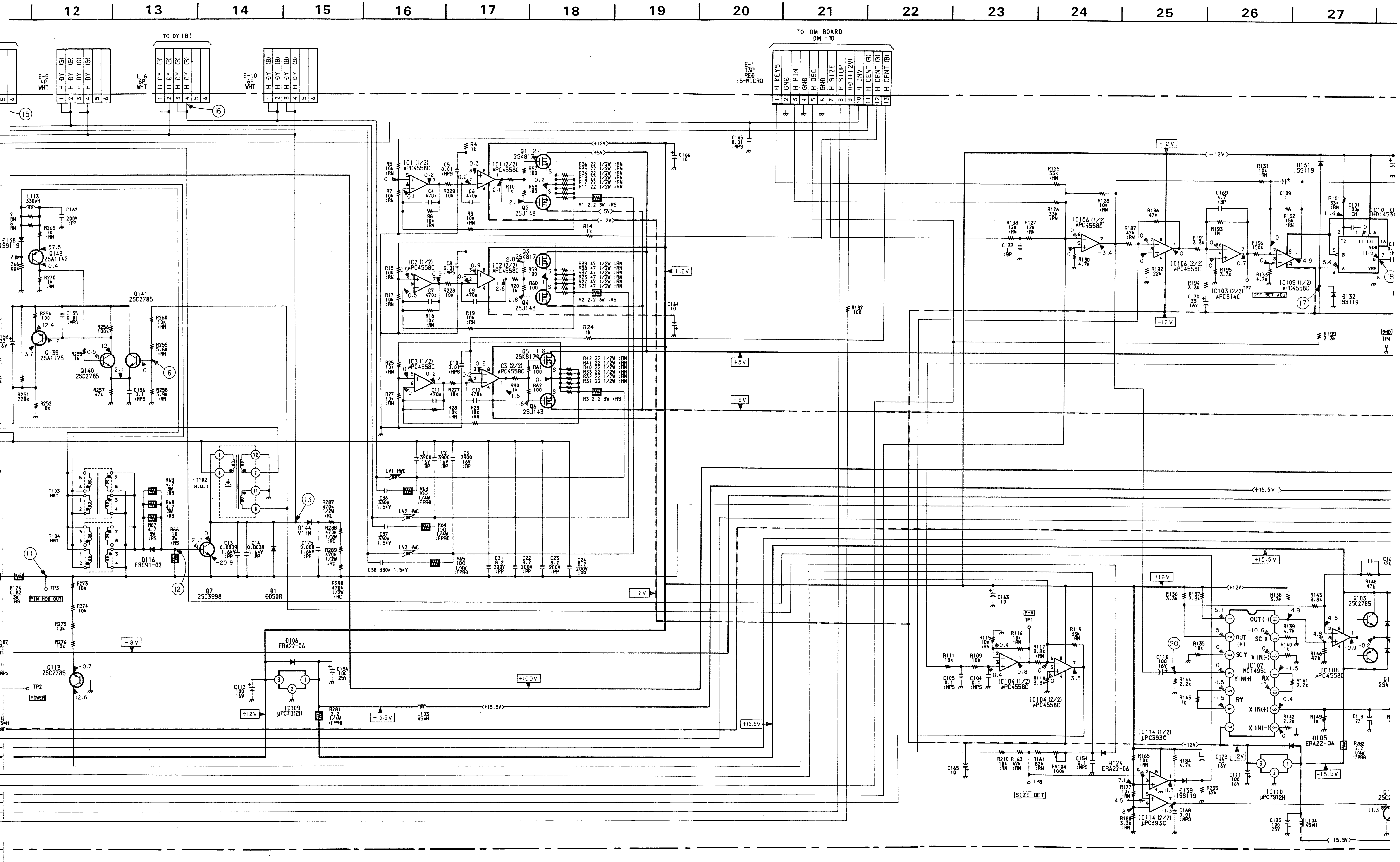
PA	IC1(1/2)	μPC4082C	HV REG DET
	1(2/2)	μPC4082C	LOW B PROT
	2(1/2)	μPC393C	HV PROT DET
	2(2/2)	μPC393C	HV PROT
	3(1/2)	μPC393C	REG UP PROT
	3(2/2)	μPC393C	ΣIk PROT
	4(1/2)	μPC393C	HV PROT BUFF
	4(2/2)	μPC393C	ΣIk PROT BUFF
	5	μPC78M12H	+12V REG
	6	μPC1394C	HV REG CONTROL
	7	TC4040BP	OSC DEV-1
	8	MC14572UBCP	OSC DEV-2
	9	TL431CLP	HV REG REF
	Q1	2SC2785	ΣIk DET-1
	2	2SC2785	ΣIk DET-2
	3	2SA1175	OSC BUFF-1
	4	2SA1175	OSC BUFF-2
	5	2SC2688	HV REG DRIVE
	6	2SC2688	HV CONV DRIVE
	7	2SC2785	HV STOP SW-1
	8	2SC2785	HV STOP SW-2
	10	2SD1887	HV CONV
	11	2SC2555	HV REG
	12	2SA1175	POWER ON RESET
	13	DTA114TS	POWER OFF RESET
	15	2SC2785	POWER CONT
	16	2SC2785	STOP BUFF
	17	2SC2785	STOP INV
	18	2SC3675	G2 REG
	20	2SA1175	REG OSC BUFF
	D3	1SS119	ΣIk SW
	4	1SS119	ΣIk HOLD
	5	RD5.1ESB2	ΣIk ZENER
	6	1SS119	REG STOP SW-1
	7	1SS119	REG STOP SW-2
	8	1SS119	REG STOP SW-3
	9	1SS119	HV PROT HOLD
	10	RD5.1ESB2	LOW B PROT ZENER
	11	1SS119	LOW B PROT SW
	12	RD5.1ESB2	HV PROT ZENER
	13	1SS119	+12V HOLD
	14	RD10ESB2	REG PROT
	16	1SS119	OSC CLAMP
	18	1SS119	+12V PROT
	20	ERC06-15SA	DUMPER-1
	21	ERC06-15SA	DUMPER-2
	22	RU-1	SPEED UP
	23	ERD29-08J	HV REG RECT
	24	1SS119	STOP SW-1
	25	1SS119	STOP SW-2
	28	1SS119	STOP SW-3
	29	1SS119	STOP SW-4
	31	1SS119	DIS CHARGE


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
FOCUS PACK
TO MV
MV
TO K-2
DF
TO PA-9
DET
TO PA-9
G2
FOCUS
SCREEN (G2)
R
G
B
TO CB(R) BOARD
TO CB(G) BOARD
TO CB(B) BOARD
TO CB(R) BOARD CB(R)-2
TO CB(G) BOARD CB(G)-2
TO CB(B) BOARD CB(B)-2
HV.BLOCK
REG
GND
PROT
NC
IN
HV.FILTER
OUT
PA-9 3P WHT :MINI
G2
NC
DET
TO FOCUS PACK
C.GND
PA-6 5P WHT :LARGE
ABL
FBT.COOL
FBT.HOT
TO PB
PA-8 3P YEL-L :S-MICRO
PA-7 6P WHT-L :S-MICRO
HV.REG.
H.CONV.I
H.CONV.O
HV.PROT
TO HV.BLOCK
Q1 2SC2785
Q18 2SC3675
Q11 2SC2555
D23 ERD29-08J
TP5
NL1
HV
FBT HOT
FBT COOL
ABL
GND
FBT1
FBT2
PB-1 3P BLK :S-MICRO
TO BLK
NL502
NL501
C502 0.1 200V
C501 0.1 200V
PB
(FBT)
(■:MOUNTED PB BOARD)

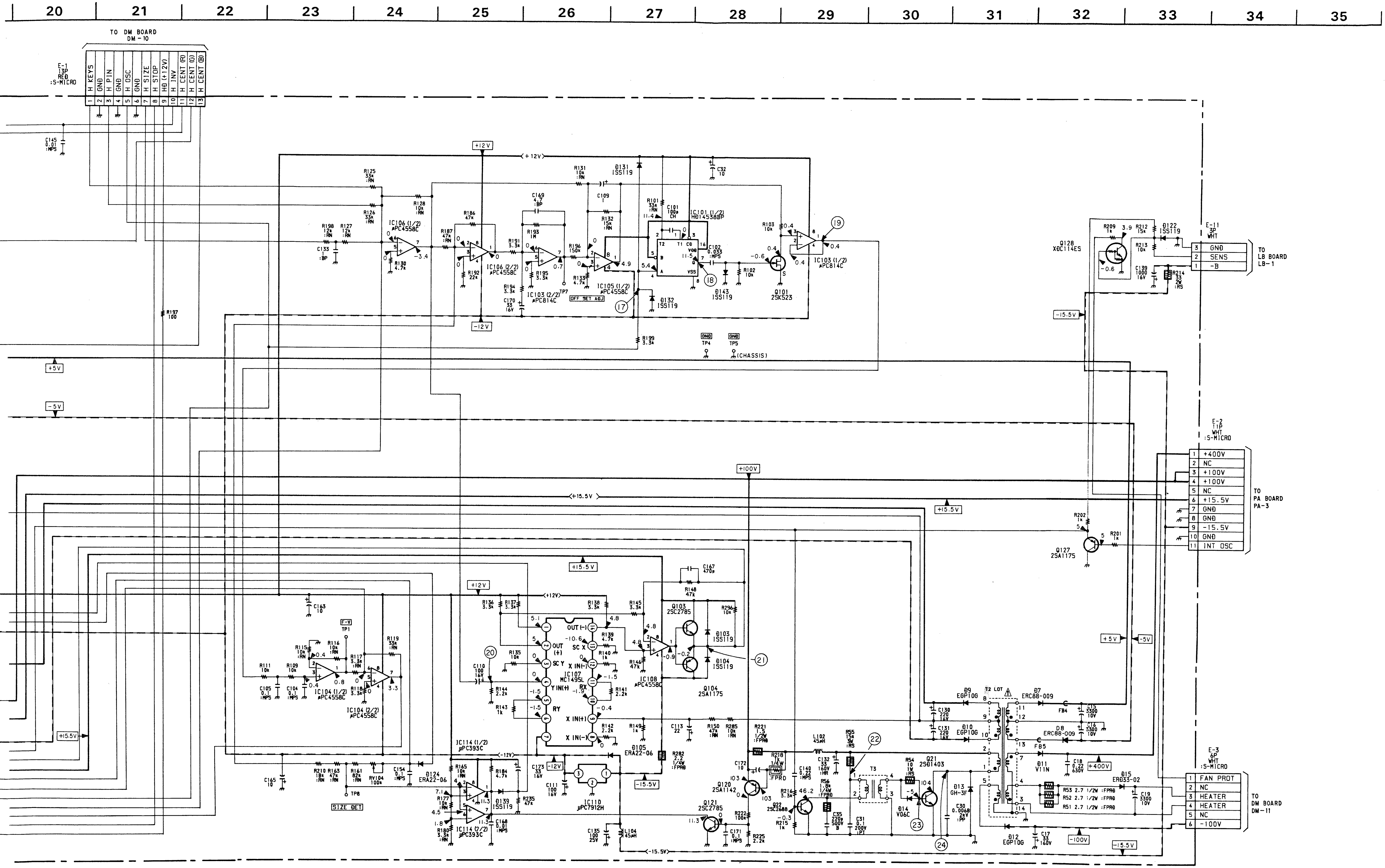

PA
(HIGH VOLTAGE REG)
(■:MOUNTED PA BOARD)
PA-9 3P WHT :MINI
G2
NC
DET
FOCUS PACK
PA-6 5P WHT :LARGE
GND
ABL
BT.COOL
NC
BT.HOT
TO PB
PA-8 3P YEL-L :S-MICRO
PA-7 6P WHT-L :S-MICRO
V.REG.
CONV.I
CONV.O
HV.PROT
HV.BLOCK
PA-3 11P WHT-L :S-MICRO
TO E BOARD E-2
+400V
+100V
+15.5V
-15.5V
INT.OSC
PA-2 5P WHT-L :S-MICRO
TO M1 BOARD (SWITCHING REGULATOR)
PA-1 3P WHT-L :S-MICRO
TO M2 BOARD (SWITCHING REGULATOR)
PA-5 8P WHT-L :S-MICRO
V PARA
H PARA
H SAW
TO K-1
PA-4 13P WHT-L :S-MICRO
FAN PROT
H STOP
V STOP
POWER CONT
HV PROT
Σ1K
ABL
TO DM BOARD DM-29
IC201,202 AMP
IC201 (2/2) μPC814C
IC202 μPC318C
IC201 (1/2) μPC814C AMP
D201 RD10ESB2 PROTECT
IC1 μPC4082C
IC2 μPC393C
IC3 μPC393C
IC4 μPC393C
IC5 μPC78M12H
IC6 μPC1394C
IC7 TC4040BP
IC8 MC14572UBCP
IC9 TL431CLP
Q1 2SC2785
Q2 2SC2785
Q3 2SA1175
Q4 2SA1175
Q5 2SC2688
Q6 2SC2688
Q7 2SC2785
Q8 2SC2785
Q10 2SD1887
Q11 2SC2555
Q12 2SA1175
Q13 DTA114TS
Q14 2SC2785
Q15 2SC2785
Q16 2SC2785
Q17 2SC2785
Q18 2SC3675
Q20 2SA1175
REG OSC
HV DET
INT OSC
+12V
+100V
+15.5V
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23


14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
PA
(HIGH VOLTAGE REG)
(■:MOUNTED PA BOARD)
IC6 μPC1394C
DSC
IC7 TC4040BP
IC8 MC14572UBCP
IC5 μPC78M12H
Q13 DTA114TS
Q20 2SA1175
Q3 2SA1175
Q4 2SA1175
Q17 2SC2785
Q7 2SC2785
Q8 2SC2785
Q15 2SC2785
Q16 2SC2785
REG OSC
INT OSC
TP1
TP2
TP4
TP6
+12V
+15.5V
+100V
GND
L5 45μH
L6 45μH
PA-3 11P WHT-L :S-MICRO
+400V
NC
+100V
+100V
NC
+15.5V
GND
GND
-15.5V
GND
INT.OSC
TO E BOARD E-2
PA-2 5P WHT-L :S-MICRO
TO M1 BOARD (SWITCHING REGULATOR)
PA-1 3P WHT-L :S-MICRO
TO M2 BOARD (SWITCHING REGULATOR)
PA-5 8P WHT-L :S-MICRO
V PARA
H PARA
H SAW
TO K-1
PA-4 13P WHT-L :S-MICRO
FAN PROT
H STOP
V STOP
POWER CONT
HV PROT
Σ1K
ABL
TO DM BOARD DM-29
K
(DYNAMIC FOCUS)
IC201,202 AMP
IC201 (2/2) μPC814C
IC202 μPC318C
IC201 (1/2) μPC814C AMP
Q201 2SD1138 BUFFER
Q202 2SB861 BUFFER
Q203 2SK929 AMP
Q204 2SK929 BUFFER
D201 RD10ESB2 PROTECT
D202 RD10ESB2 PROTECT
T201
SG201
SG202
+400V
K-2 1P WHT :MINI
DF
TO FOCUS PACK
K-5 3P YEL :S-MICRO
K-1 8P WHT :S-MICRO
TO PA-5
①
②
③
④
⑤
⑧
⑨


E (H.OUT)
TO DY(R)
TO DY(G)
TO DY(B)
E-4 6P WHT
E-8 6P WHT
E-5 6P WHT
E-9 6P WHT
E-6 6P WHT
E-10 6P WHT
H DY (R)
H INV
GND
+100V
+12V
TP6
H STOP
E-13 2P WHT :MINI
GND
(CHASSIS)
Q115 X0C114ES
IC101 HD14538BP (2/2)
Q116 2SC2785
Q117 2SA1175
Q118 2SK523
IC113 (1/2) LM393P
IC113 (2/2) LM393P
Q130 2SC2785
Q131 2SA1175
Q132 2SA1175
Q133 2SC2785
Q134 2SC2785
Q135 2SC2785
Q136 2SA1175
Q137 2SC2688
Q138 2SC2785
Q139 2SA1175
Q140 2SC2785
Q141 2SC2785
Q142 2SK929
Q143 2SC2688
Q144 2SC4054N
Q145 2SK755
Q146 2SC2688
Q147 2SC4054N
Q148 2SA1142
IC111 μPC1394C
SOFT DUTY
ON/OFF
OSC
COMP
CURRENT LIMIT
Q129 2SC2785
Q102 2SA1175
Q107 2SD774
Q108 2SB734
Q109 2SK523
Q110 2SK929
T105 90T
IC105 (2/2) μPC4558C
L112 5RT 1.3mH
D112 ERD29-08J
Q111 2SK929
Q112 2SJ143
Q106 2SC2785
IC112 μPC4558C
TP3
PIN MOD OUT
TP2
POWER
-8V
T103 HBT
T104 HBT
T102 H.O.T
D116 ERC91-02
Q7 2SC3998
D1 D050R
Q113 2SC2785
IC109 μPC7812H
+12V
+15.5V
IC1 (1/2) μPC4558C
IC2 (1/2) μPC4558C
LV1 HWC
LV2 HWC
LV3 HWC
C38 330p 1.5kV



12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
TO DY (B)
TO DM BOARD DM-10
E-9 6P WHT
E-6 6P WHT
E-10 6P WHT
E-1 13P RED :S-MICRO
H DY (G)
H DY (B)
H KEYS
GND
H PIN
GND
H OSC
GND
H SIZE
H STOP
HD (+12V)
INV
H CENT (R)
H CENT (G)
H CENT (B)
IC1 (1/2) μPC4558C
IC1 (2/2) μPC4558C
IC2 (1/2) μPC4558C
IC2 (2/2) μPC4558C
IC3 (1/2) μPC4558C
IC3 (2/2) μPC4558C
Q1 2SK817
Q2 2SJ143
Q3 2SK817
Q4 2SJ143
Q5 2SK817
Q6 2SJ143
Q7 2SC3998
D1 D050R
T102 H.O.T
T103 HBT
T104 HBT
D116 ERC91-02
D144 V11N
D106 ERA22-06
IC109 μPC7812H
L103 45μH
Q113 2SC2785
Q139 2SA1175
Q140 2SC2785
Q141 2SC2785
Q148 2SA1142
D138 1SS119
L113 330μH
LV1 HWC
LV2 HWC
LV3 HWC
TP2 POWER
TP3 PIN MOD OUT
+12V
+5V
-5V
-12V
-8V
+100V
+15.5V
-15.5V
IC106 (1/2) μPC4558C
IC106 (2/2) μPC4558C
IC103 (2/2) μPC814C
IC105 (1/2) μPC4558C
IC101 HD1453
D131 1SS119
D132 1SS119
OFF SET ADJ
TP7
TP4 GND
IC104 (1/2) μPC4558C
IC104 (2/2) μPC4558C
TP1 F-V
TP8 SIZE DET
RV104 100k
D124 ERA22-06
IC114 (1/2) μPC393C
IC114 (2/2) μPC393C
D139 1SS119
IC107 MC1495L
IC108 μPC4558C
Q103 2SC2785
D105 ERA22-06
IC110 μPC7912H
L104 45μH
OUT(-)
OUT(+)
SC X
SC Y
X IN(-)
Y IN(+)
RX
RY
X IN(+)
⑪
⑫
⑬
⑮
⑯
⑰
⑱
⑳
⑥

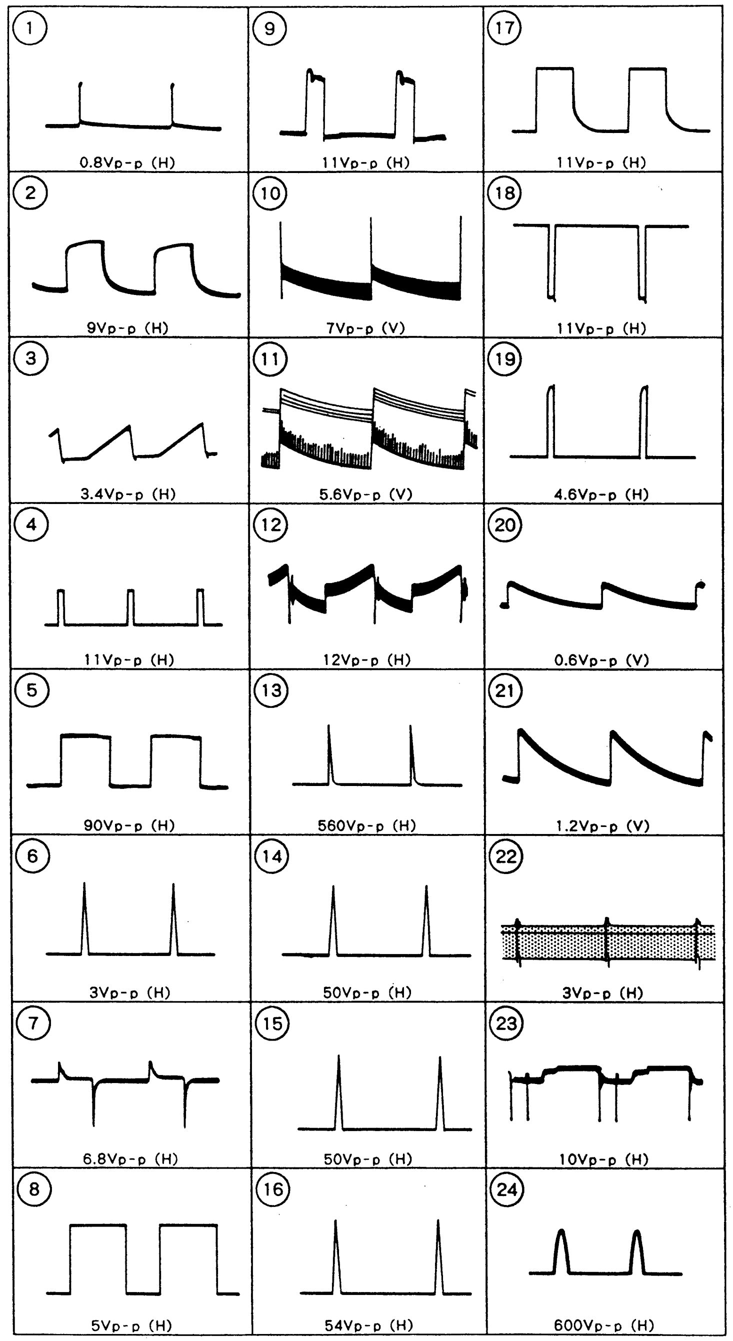

20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
TO DM BOARD DM-10
E-1 13P RED :S-MICRO
H KEYS
GND
H PIN
GND
H OSC
GND
H SIZE
H STOP
HD (+12V)
H INV
H CENT (R)
H CENT (G)
H CENT (B)
+12V
-12V
+5V
-5V
+15.5V
-15.5V
+100V
IC106 (1/2) μPC4558C
IC106 (2/2) μPC4558C
IC103 (2/2) μPC814C
IC105 (1/2) μPC4558C
IC101 (1/2) HD14538BP
IC103 (1/2) μPC814C
Q101 2SK523
OFF SET ADJ
TP4
TP5
(CHASSIS)
E-11 3P WHT
GND
SENS
-B
TO LB BOARD LB-1
Q128 XDC114ES
E-2 11P WHT :S-MICRO
+400V
NC
+100V
+100V
NC
+15.5V
GND
GND
-15.5V
GND
INT OSC
TO PA BOARD PA-3
Q127 2SA1175
IC104 (1/2) μPC4558C
IC104 (2/2) μPC4558C
F-V TP1
IC107 MC1495L
IC108 μPC4558C
Q103 2SC2785
Q104 2SA1175
IC114 (1/2) μPC393C
IC114 (2/2) μPC393C
IC110 μPC7912H
SIZE DET
TP8
Q120 2SA1142
Q121 2SC2785
Q22 2SC2688
Q21 2SD1403
T2 LOT
T3
D15 ERD33-02
E-3 6P WHT :S-MICRO
FAN PROT
NC
HEATER
HEATER
NC
-100V
TO DM BOARD DM-11
-100V
+400V

E BOARD

REF.	Pin No.	PAL
IC103	⑦	1.3
IC105	①	4.9
IC112	①	- 24.7
	②	- 23.5
	③	- 23.5
IC114	②	4.7
	⑤	4.7

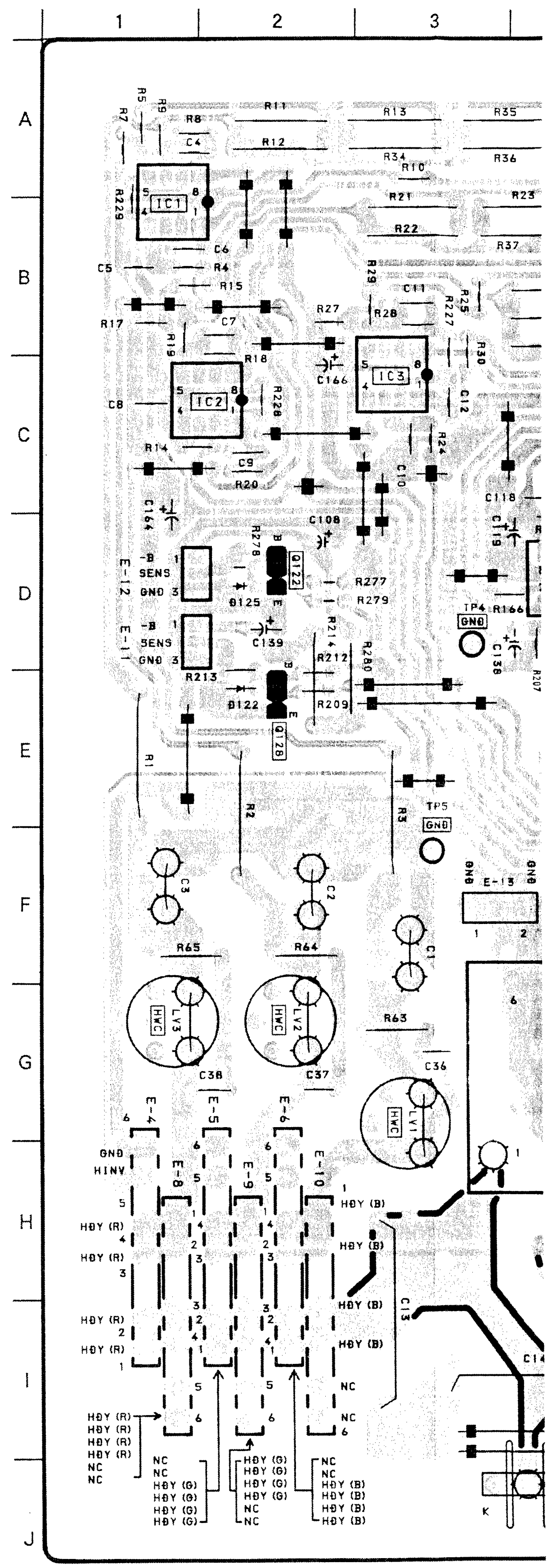
REF.		WHITE
Q007	B	- 21.6
	C	- 0.3
	E	- 20.8
Q106	B	- 23.6
	C	- 23.6
	E	- 23.5
Q107	B	3.0
	C	–
	E	2.8
Q108	B	2.5
	C	–
	E	2.8
Q113	B	–
	C	12.7
	E	–
Q137	B	3.8
	C	106.3
	E	3
Q138	B	11.9
	C	3.5
	E	–
Q140	B	11.9
	C	3.5
	E	–
Q143	B	–
	C	11.9
	E	–
Q144	B	112
	C	112.5
	E	111.5
Q146	B	111.4
	C	112.3
	E	110.7
Q147	B	63.5
	C	110.3
	E	63.5
Q148	B	62.5
	C	0.4
	E	60.4

E BOARD

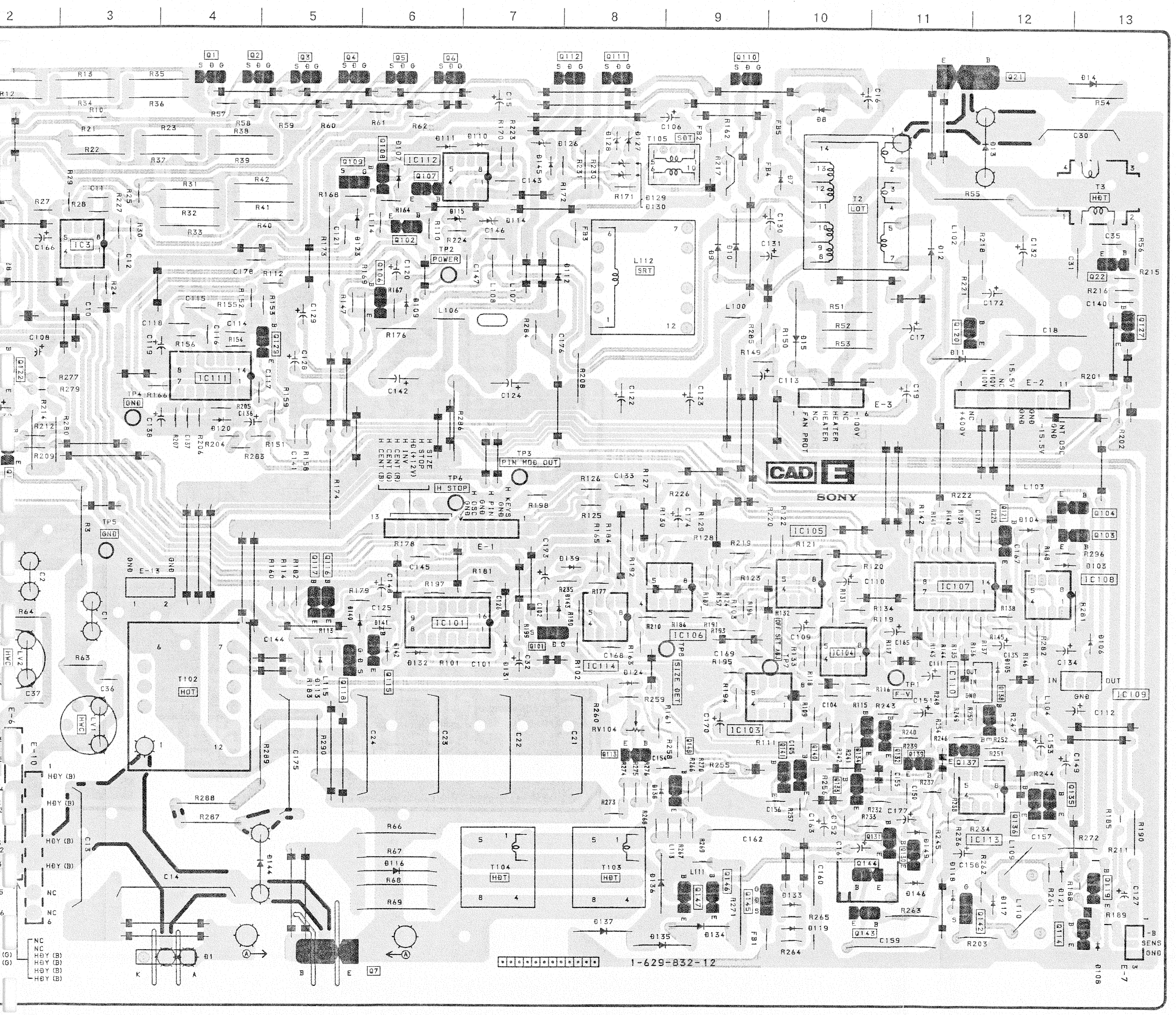


E	IC1	µPC4558C	H CENT DRIVE (R)	Q143	2SC2688	H DRIVE REG
	2	µPC4558C	H CENT DRIVE (G)	144	2SC4054N	H DRIVE REG
	3	µPC4558C	H CENT DRIVE (B)	145	2SK755	H DRIVE
	101	HD14538BP	H PULSE GEN.	146	2SC2688	H DRIVE BUFF
	103	µPC814C	F-V AMP	147	2SC4054N	H DRIVE BUFF
	104	µPC4558C	F-V AMP	148	2SA1142	1B DET
	105	µPC558C	F-V AMP			
	106	µPC4558C	F-V AMP	D1	DD50R	H OUT DAMP
	107	MC1495L	MOD LEVEL CONT	7	ERC88-009	-5V RECT
	108	µPC4558C	PIN MOD PRE AMP	8	ERC88-009	+5V RECT
	109	µPC7812H	+12V REG.	9	EGP10G	PIN MOD RECT
	110	µPC912H	-12V REG.	10	EGP10G	PIN MOD RECT
	111	µPC1394C	PIN MOD REG. CONT	11	V11N	+400V RECT
	112	µPC4558C	PIN MOD AMP	12	EGP10G	-100V RECT
	113	µPC393C	H OSC DET	13	GH-3F	LOT DAMP
	114	µPC393C	H SIZE PROT	14	V06C	SPEED UP
				15	ERD33-02	HEATER RECT
	Q1	2SK817	H CENT OUT (R)	103	1SS119	PROT
	2	2SJ143	H CENT OUT (R)	104	1SS119	PROT
	3	2SK817	H CENT OUT (G)	105	ERA22-06	-12V REG. PROT
	4	2SJ143	H CENT OUT (G)	106	ERA22-06	+12V REG. PROT
	5	2SK817	H CENT OUT (B)	107	1SS119	PIN MOD REG. BIAS
	6	2SJ143	H CENT OUT (B)	109	ERA22-06	CLAMP
	7	2SC3998	H OUT	110	1SS119	LEVEL SHIFT
	21	2SD1403	LOT CONV.	111	1SS119	LEVEL SHIFT
	22	2SC2688	LOT DRIVE	112	ERD29-08J	PIN MOD REG. CLAMP
	101	2SK523	F-V SW	113	1SS119	CLAMP
	102	2SA1175	POWER OFF PROT	114	RD20ES-B2	PROT
	103	2SC2785	PIN MOD PRE BUFF	115	RD20ES-B2	PROT
	104	2SA1175	PIN MOD PRE BUFF	116	ERC91-02	SPEED UP
	106	2SC2785	PIN MOD PROT	117	1SS119	SPEED UP
	107	2SD774	PIN MOD REG. DRIVE	118	ERA22-06	CLAMP
	108	2SB734	PIN MOD REG. DRIVE	119	1SS119	PROT
	109	2SK523	PIN MOD REG. PRE DRIVE	120	1SS119	PROT
	110	2SK929	PIN MOD REG.	121	1SS119	PROT
	111	2SK929	H PIN OUT	122	1SS119	PROT
	112	2SJ143	H PIN OUT	123	1SS119	CLAMP
	113	2SC2785	H SIZE CONST	124	ERA22-06	H SIZE DET
	115	XDC114ES	H STOP SW	126	RD39ES-B2	PIN MOD DET
	116	2SC2785	HD OUT	127	RD15ES-B2	PROT
	117	2SA1175	HD OUT	128	RD15ES-B2	PROT
	118	2SK523	HD DRIVE	129	RD15ES-B2	PROT
	120	2SA1142	CURRENT PROT	130	RD15ES-B2	PROT
	121	2SC2785	CURRENT PROT SW	131	1SS119	PROT
	127	2SA1175	INV OSC BUFF	132	1SS119	PROT
	128	XDC114ES	FAN PROT SW	133	1SS119	SPEED UP
	129	2SC2785	POWER ON BIAS	134	RU-1	H DRIVE PROT
	130	2SC2785	H OSC BUFF	135	RU-1	H DRIVE PROT
	131	2SA1175	H OSC BUFF	136	RU-1	H DRIVE PROT
	132	2SA1175	CONST AMP	137	RU-1	H DRIVE PROT
	133	2SC2785	CONST AMP	138	1SS119	THERM CANCEL
	134	2SC2785	CONST AMP	139	1SS119	H SIZE PROT SW
	135	2SC2785	VARIABLE REG OUT	140	1SS119	DISCHARGE
	136	2SA1175	VARIABLE REG OUT	141	1SS119	H STOP GATE
	137	2SC2688	1B CONT	142	1SS119	H STOP GATE
	138	2SC2785	1B CONT	143	1SS119	CLAMP
	139	2SA1175	1B CONT	144	V11N	PULSE PROT
	140	2SC2785	1B DET	145	1SS119	PROT
	141	2SC2785	PULSE DET	146	ERA22-06	PROT
	142	2SK929	VARIABLE REG OUT	149	1SS119	PROT

– E BOARD –



E [H OUT]


2
3
4
5
6
7
8
9
10
11
12
13
IC101
IC103
IC104
IC105
IC106
IC107
IC108
IC109
IC111
IC112
IC113
IC114
T102 HDT
T103 HDT
T104 HDT
T105 SBT
T2 LOT
T3 HDT
L112 SRT
TP2 POWER
TP3 PIN MOD OUT
TP4 GND
TP5 GND
TP6 H STOP
E-1
E-2
E-3
E-13
CAD E
SONY
1-629-832-12

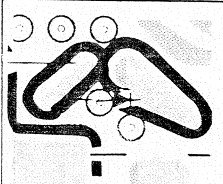
E BOARD

IC	
IC1	B-1
IC2	C-2
IC3	C-3
IC101	F-6
IC103	G-10
IC104	G-10
IC105	F-10
IC106	F-9
IC107	F-12
IC108	F-13
IC109	G-13
IC110	G-12
IC111	D-4
IC112	B-6
IC113	H-12
IC114	F-8

TRANSISTOR	
Q1	A-4
Q2	A-5
Q3	A-5
Q4	A-5
Q5	A-6
Q6	A-6
Q7	J-5
Q21	A-12
Q22	C-13
Q101	G-7
Q102	C-6
Q103	F-13
Q104	E-13
Q106	C-6
Q107	B-6
Q108	B-6
Q109	B-6
Q110	A-10
Q111	A-8
Q112	A-8
Q113	H-8
Q115	G-6
Q116	F-5
Q117	F-5
Q118	G-5
Q120	D-12
Q121	F-12
Q127	D-13
Q128	E-2
Q129	D-5
Q130	I-11
Q131	I-11
Q132	H-11
Q133	H-11
Q134	H-11
Q135	H-13
Q136	H-12
Q137	H-12
Q138	G-12
Q139	H-11
Q140	H-10
Q141	H-10
Q142	I-12
Q143	I-11
Q144	I-11
Q145	I-10
Q146	I-9
Q147	I-9
Q148	H-9

DIODE	
D1	J-4
D7	B-10
D8	A-10
D9	C-9
D10	C-9
D11	D-12
D12	C-11
D13	B-12
D14	A-13
D15	D-10
D103	F-13
D104	F-12
D105	G-12
D106	G-13
D107	B-6
D109	C-6
D110	B-7
D111	B-6
D112	C-8
D113	G-5
D114	B-7
D115	B-7
D116	I-6
D117	I-12
D118	I-11
D119	J-10
D120	D-4
D121	I-13
D122	E-2
D123	B-6
D124	G-8
D126	B-7
D127	B-8
D128	B-8
D129	B-8
D130	B-8
D131	G-7
D132	G-6
D133	I-10
D134	J-9
D135	J-9
D136	I-9
D137	J-8
D138	H-9
D139	F-8
D140	F-6
D141	F-6
D142	G-6
D143	F-8
D144	I-4
D145	B-7
D146	I-11
D149	I-11

VARIABLE RESISTOR	
RV104	H-8



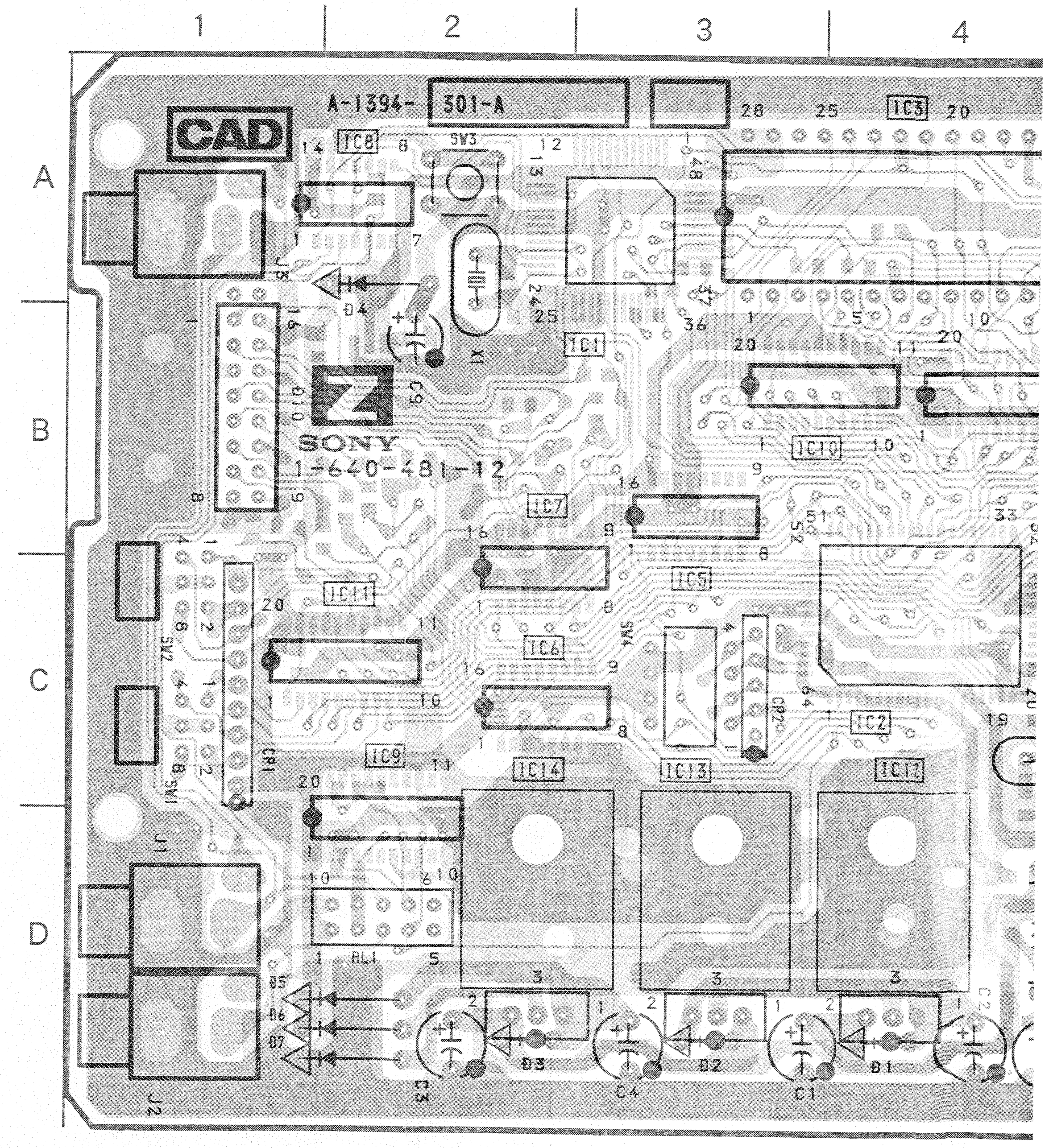
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

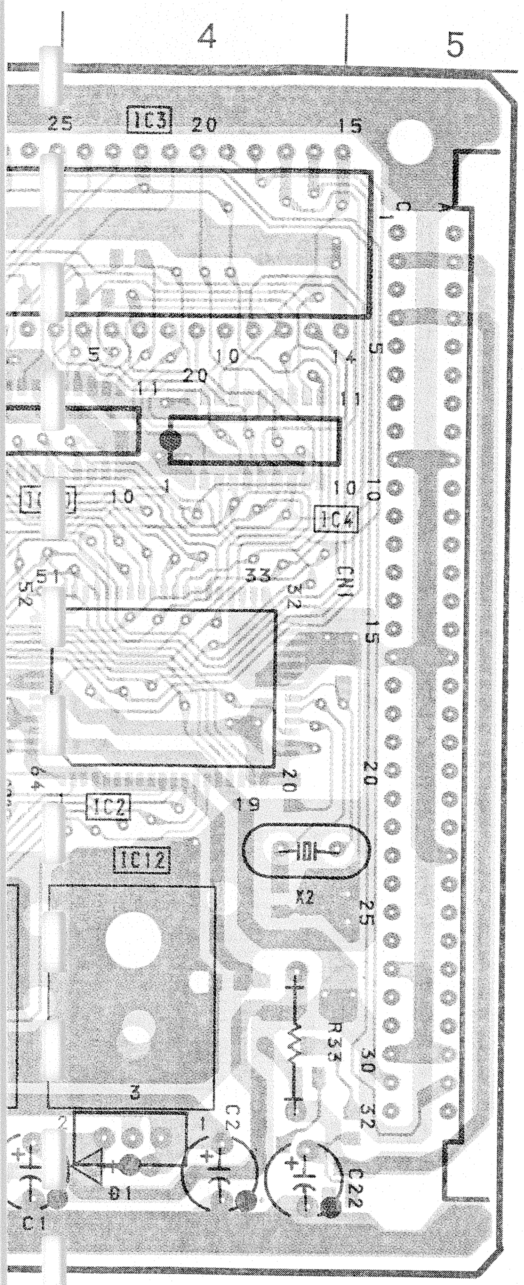
Z [SIRCS]

Z BOARD
(COMPONENT SIDE)

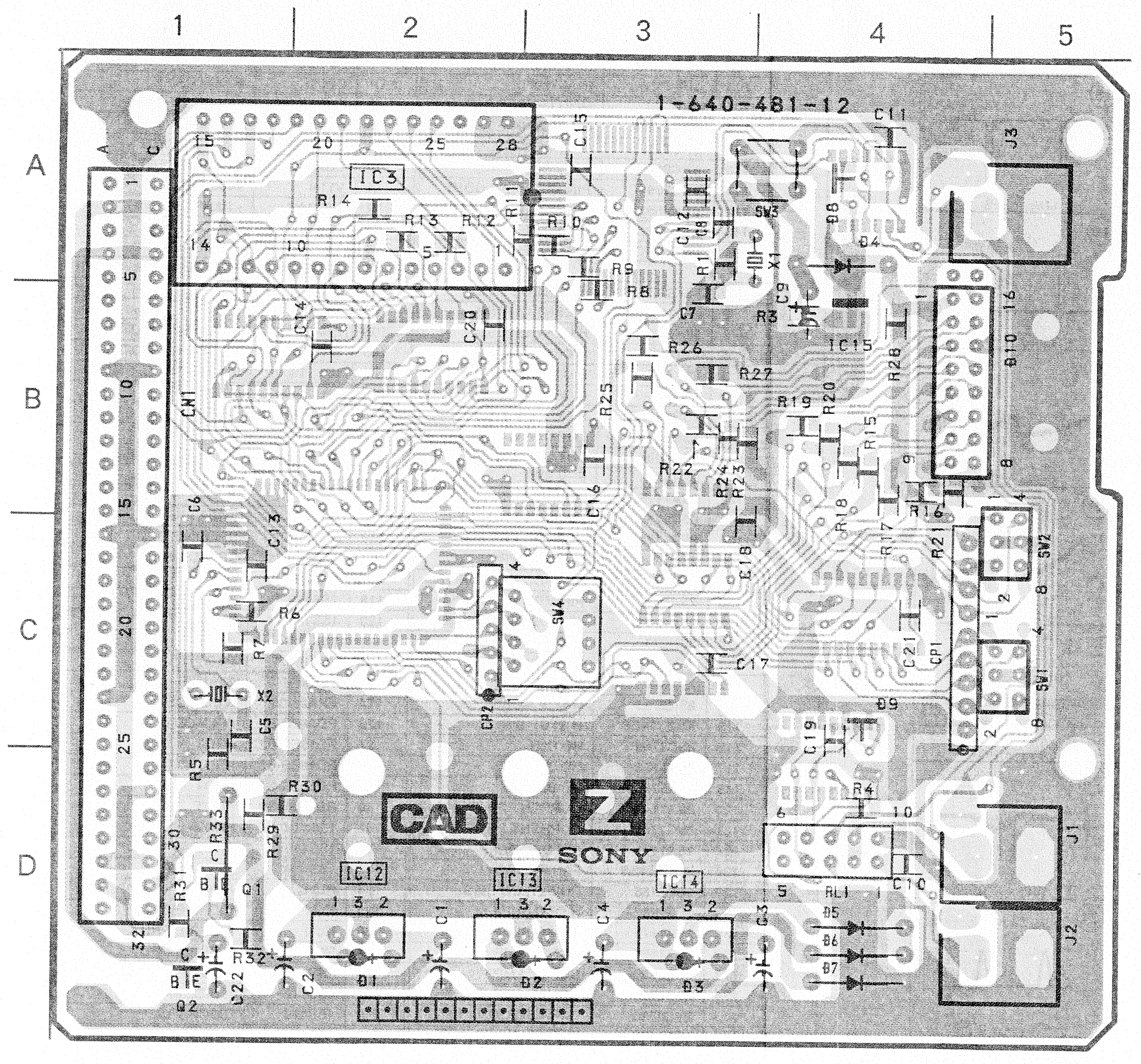
IC	
IC1	A-3
IC2	C-4
IC3	A-4
IC4	B-4
IC5	B-3
IC6	C-2
IC7	C-2
IC8	A-2
IC9	D-2
IC10	B-3
IC11	C-2
IC12	D-4
IC13	D-3
IC14	D-2
DIODE	
D1	D-4
D2	D-3
D3	D-2
D4	A-2
D5	D-1
D6	D-1
D7	D-1
D10	B-1

– Z BOARD –
(COMPONENT SIDE)


1
2
3
4
A
B
C
D
A-1394-
301-A
CAD
SONY
1-640-481-12
IC1
IC2
IC3
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
SW1
SW2
SW3
SW4
J1
J2
J3
X1
C1
C3
C4
C9
D1
D2
D3
D4
D5
D6
D7
D10
RL1
CP1
CP2


4
5
IC3
IC4
CN1
IC2
IC12
X2
R33
C22
D1
C1
C2

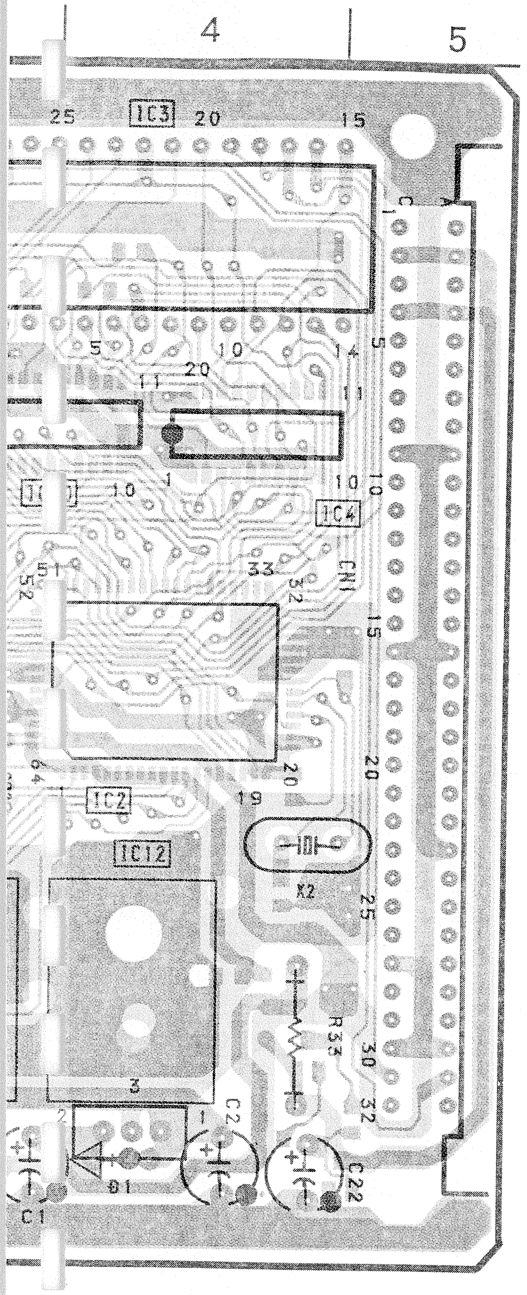
– Z BOARD –
(CONDUCTOR SIDE)


1
2
3
4
5
A
B
C
D
1-640-481-12
IC3
R14
R13
R12
R11
R10
C15
C11
J3
SW3
D8
D4
C12
D1
X1
C9
R9
R8
C7
R3
IC15
R26
R27
R28
D10
C14
C20
CN1
R25
R19
R20
R15
R22
R24
R23
C16
R18
R16
R17
R21
SW2
C6
C13
C18
SW4
R6
R7
C17
C21
CP1
SW1
X2
C5
CP2
D9
C19
R5
R4
R30
R33
R29
CAD
Z
SONY
RL1
C10
J1
J2
R31
Q1
IC12
IC13
IC14
C1
C4
C3
D5
D6
D7
R32
C22
C2
Q2
D1
D2
D3

Z BOARD
(CONDUCTOR SIDE)

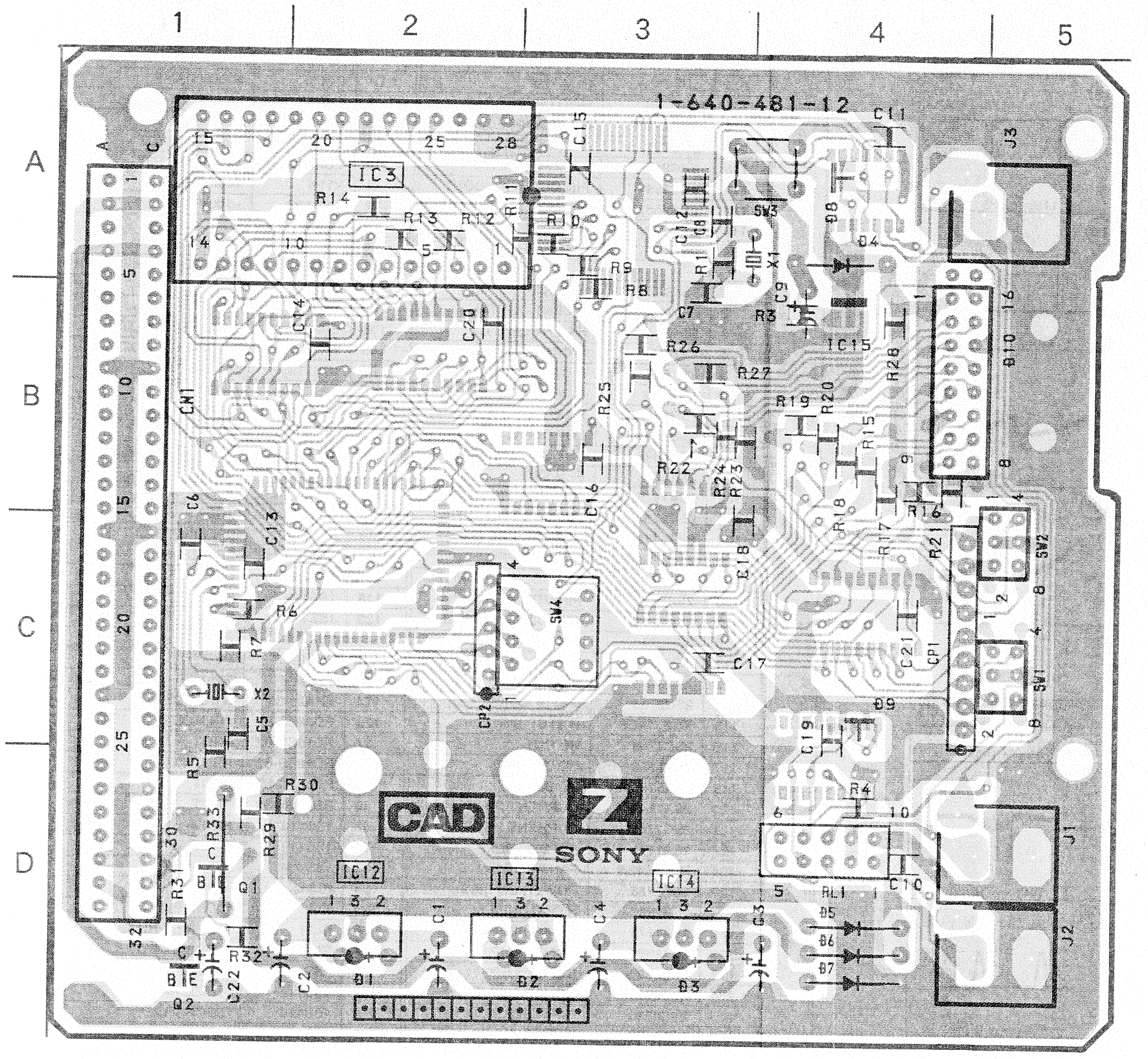
IC	
IC12	D-2
IC13	D-3
IC14	D-3
IC15	B-4
TRANSISTOR	
Q1	D-1
Q2	D-1
DIODE	
D1	D-2
D2	D-3
D3	D-3
D4	A-4
D5	D-4
D6	D-4
D7	D-4
D8	A-4
D9	C-4
D10	D-4

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.


4
5
IC3
IC4
IC2
IC12
CN1
X2
R33
C22
C2
C1
D1

– Z BOARD –

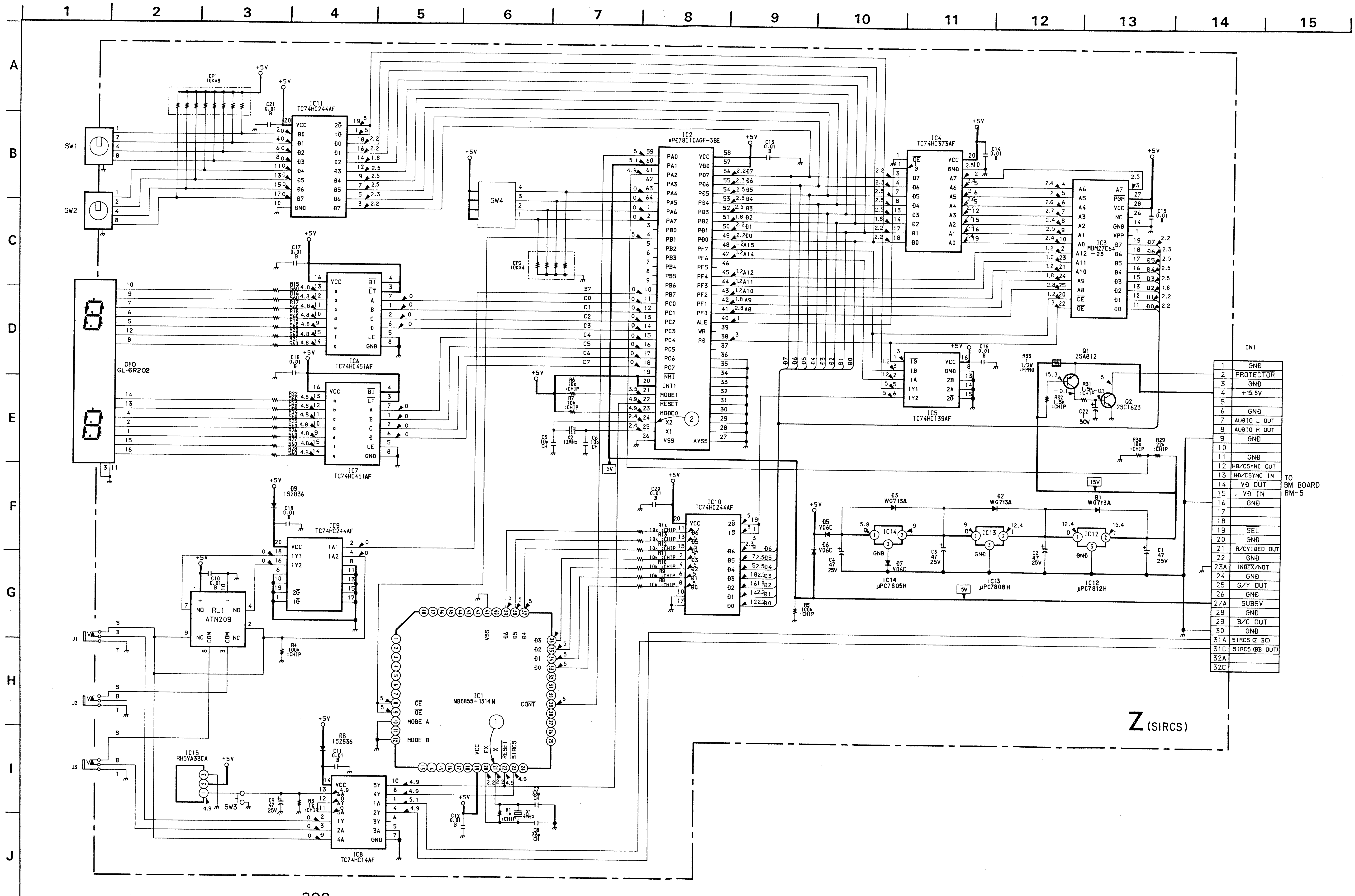
(CONDUCTOR SIDE)

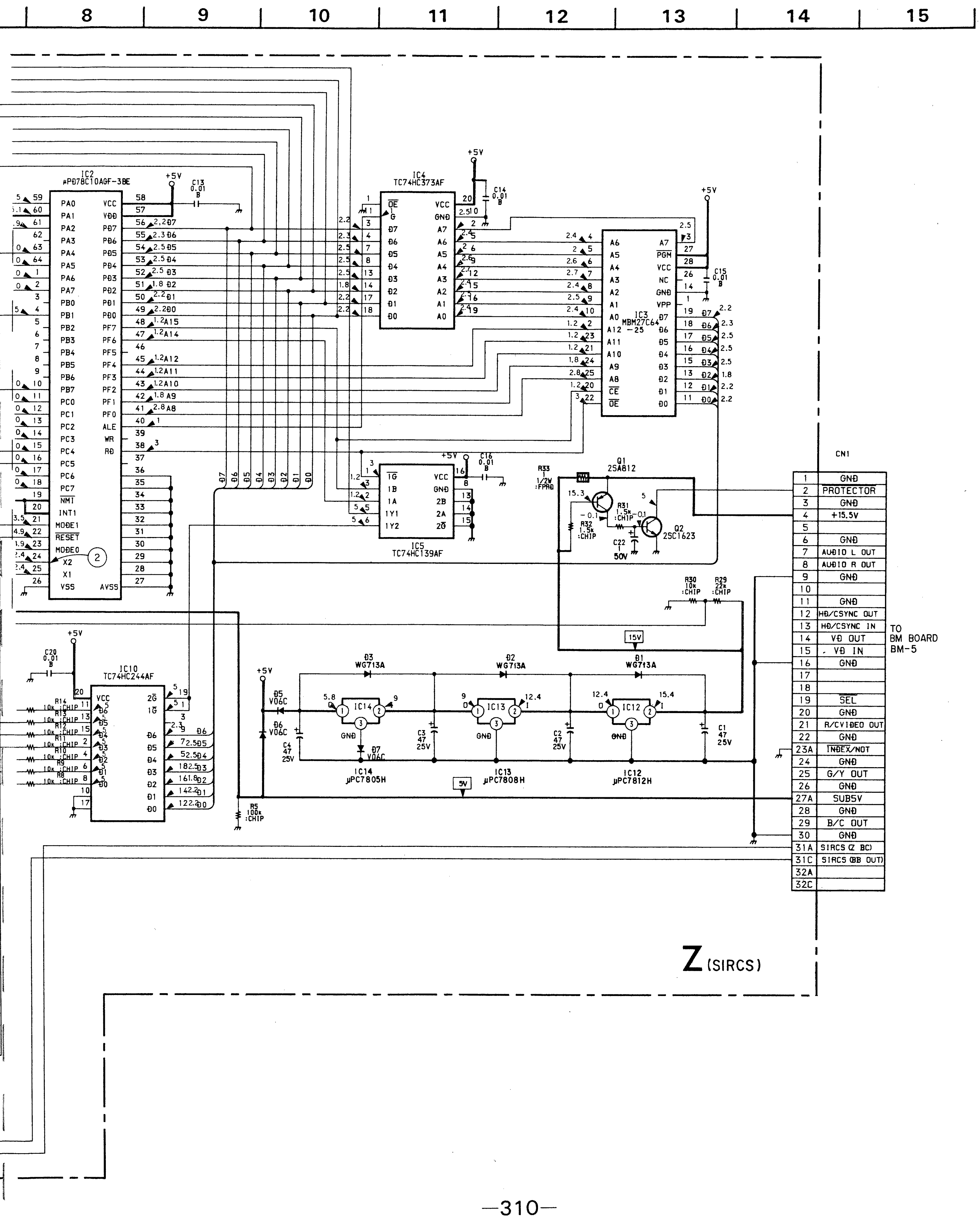

1
2
3
4
5
A
B
C
D
1-640-481-12
IC3
IC12
IC13
IC14
IC15
CN1
SW1
SW2
SW3
SW4
X1
X2
J1
J2
J3
RL1
CP1
CP2
Q1
Q2
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
CAD
Z
SONY

• ▨ : Pattern from the side which enables seeing.
• ▨ : Pattern of the rear side.

Z BOARD (CONDUCTOR SIDE)

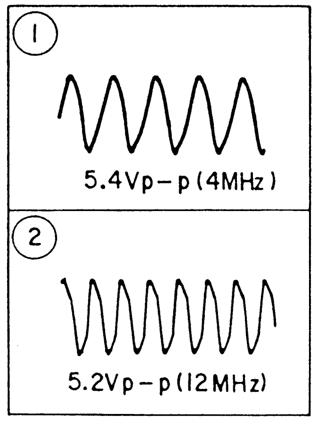
IC	
IC12	D-2
IC13	D-3
IC14	D-3
IC15	B-4
TRANSISTOR	
Q1	D-1
Q2	D-1
DIODE	
D1	D-2
D2	D-3
D3	D-3
D4	A-4
D5	D-4
D6	D-4
D7	D-4
D8	A-4
D9	C-4
D10	D-4

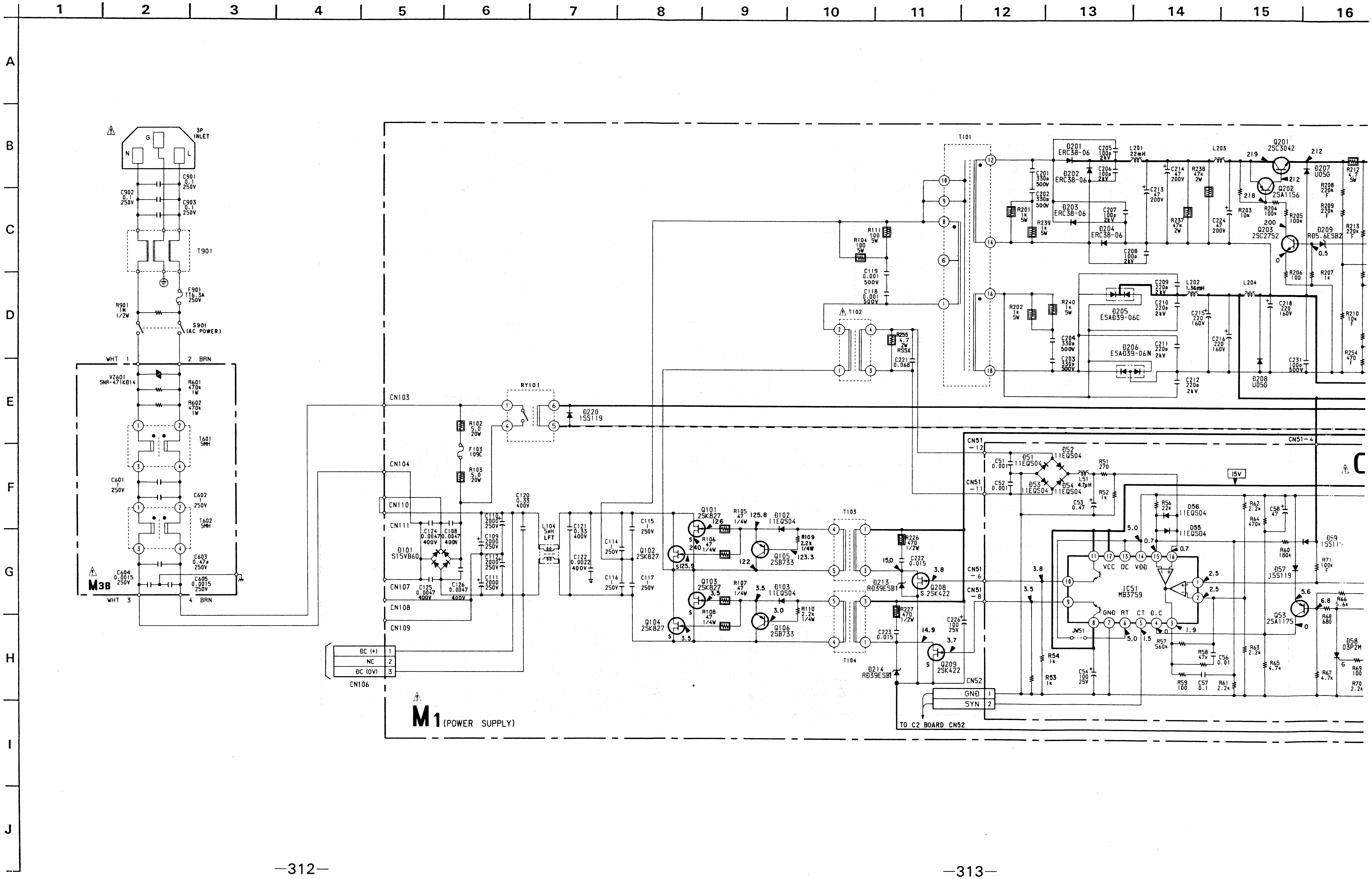

Z (SIRCS)
SW1
SW2
SW3
SW4
CP1 10K×8
CP2 10K×4
IC11 TC74HC244AF
IC2 μPD78C10AGF-3BE
IC4 TC74HC373AF
IC3 MBM27C64-25
IC5 TC74HC139AF
IC6 TC74HC451AF
IC7 TC74HC451AF
IC9 TC74HC244AF
IC10 TC74HC244AF
IC1 MB8855-1314N
IC8 TC74HC14AF
IC15 RH5VA33CA
IC14 μPC7805H
IC13 μPC7808H
IC12 μPC7812H
D10 GL-6R202
RL1 ATN209
Q1 2SA812
Q2 2SC1623
D1 WG713A
D2 WG713A
D3 WG713A
D8 1S2836
D9 1S2836
X1 4MHz
X2 12MHz
J1
J2
J3
+5V
5V
15V
CN1
1 GND
2 PROTECTOR
3 GND
4 +15.5V
5
6 GND
7 AUDIO L OUT
8 AUDIO R OUT
9 GND
10
11 GND
12 HD/CSYNC OUT
13 HD/CSYNC IN
14 VD OUT
15 VD IN
16 GND
17
18
19 SEL
20 GND
21 R/CVIDEO OUT
22 GND
23A INDEX/NOT
24 GND
25 G/Y OUT
26 GND
27A SUB5V
28 GND
29 B/C OUT
30 GND
31A SIRCS (Z BC)
31C SIRCS (BB OUT)
32A
32C
TO BM BOARD BM-5

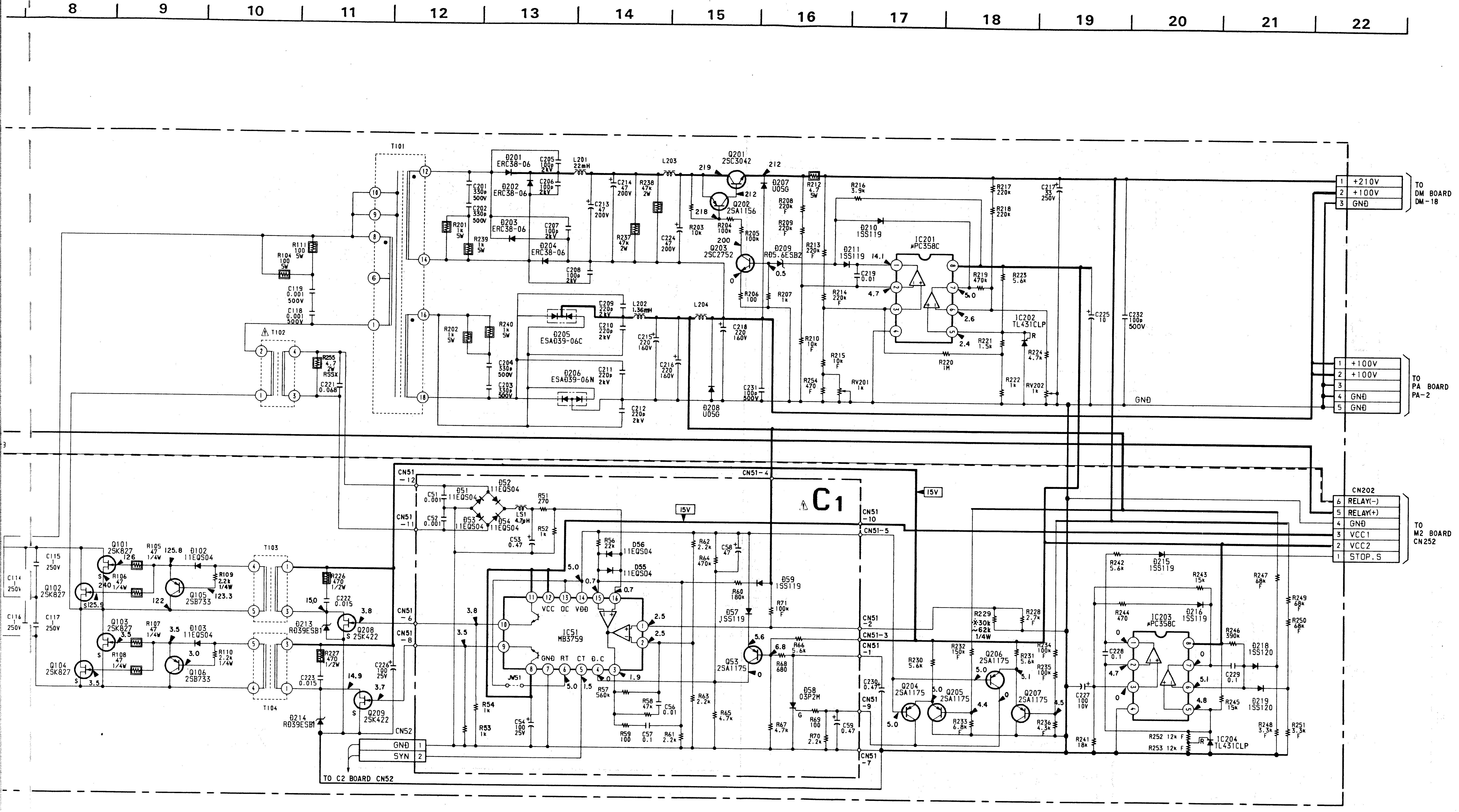

8
9
10
11
12
13
14
15
IC2 µPD78C10AGF-3BE
IC4 TC74HC373AF
IC3 MBM27C64-25
IC5 TC74HC139AF
IC10 TC74HC244AF
Q1 2SA812
Q2 2SC1623
IC14 µPC7805H
IC13 µPC7808H
IC12 µPC7812H
D3 WG713A
D2 WG713A
D1 WG713A
D5 V06C
D6 V06C
D7 V06C
+5V
15V
5V
CN1
1 GND
2 PROTECTOR
3 GND
4 +15.5V
5
6 GND
7 AUDIO L OUT
8 AUDIO R OUT
9 GND
10
11 GND
12 HD/CSYNC OUT
13 HD/CSYNC IN
14 VD OUT
15 VD IN
16 GND
17
18
19 SEL
20 GND
21 R/CVIDEO OUT
22 GND
23A INDEX/NOT
24 GND
25 G/Y OUT
26 GND
27A SUB5V
28 GND
29 B/C OUT
30 GND
31A SIRCS (Z BC)
31C SIRCS (BB OUT)
32A
32C
TO BM BOARD BM-5
Z (SIRCS)

Z	IC1	MB8855-1314N	SIRCS DECODER
	2	µPC78C10AGF-3BE	CPU
	3	MBM27C64-25	ROM
	4	TC74HC373AF	LATCH
	5	TC74HC139AF	DECODER
	6	TC74HC4511AF	7 SEGMENT DRIVER
	7	TC74HC4511AF	7 SEGMENT DRIVER
	8	TC74HC14AF	INVERTER
	9	TC74HC244AF	BUFFER
	10	TC74HC244AF	LATCH
	11	TC74HC244AF	LATCH
	12	µPC7812H	+12V REG
	13	µPC7808H	+9V REG
	14	µPC7805H	+5 REG
	15	RH5VA33CA	
	Q1	2SA812	
	2	2SC1623	
	D1	WG713A	
	2	WG713A	
	3	WG713A	
	5	V06C	
	6	V06C	
	7	V06C	
	8	1S2836	
	9	1S2836	

Z BOARD



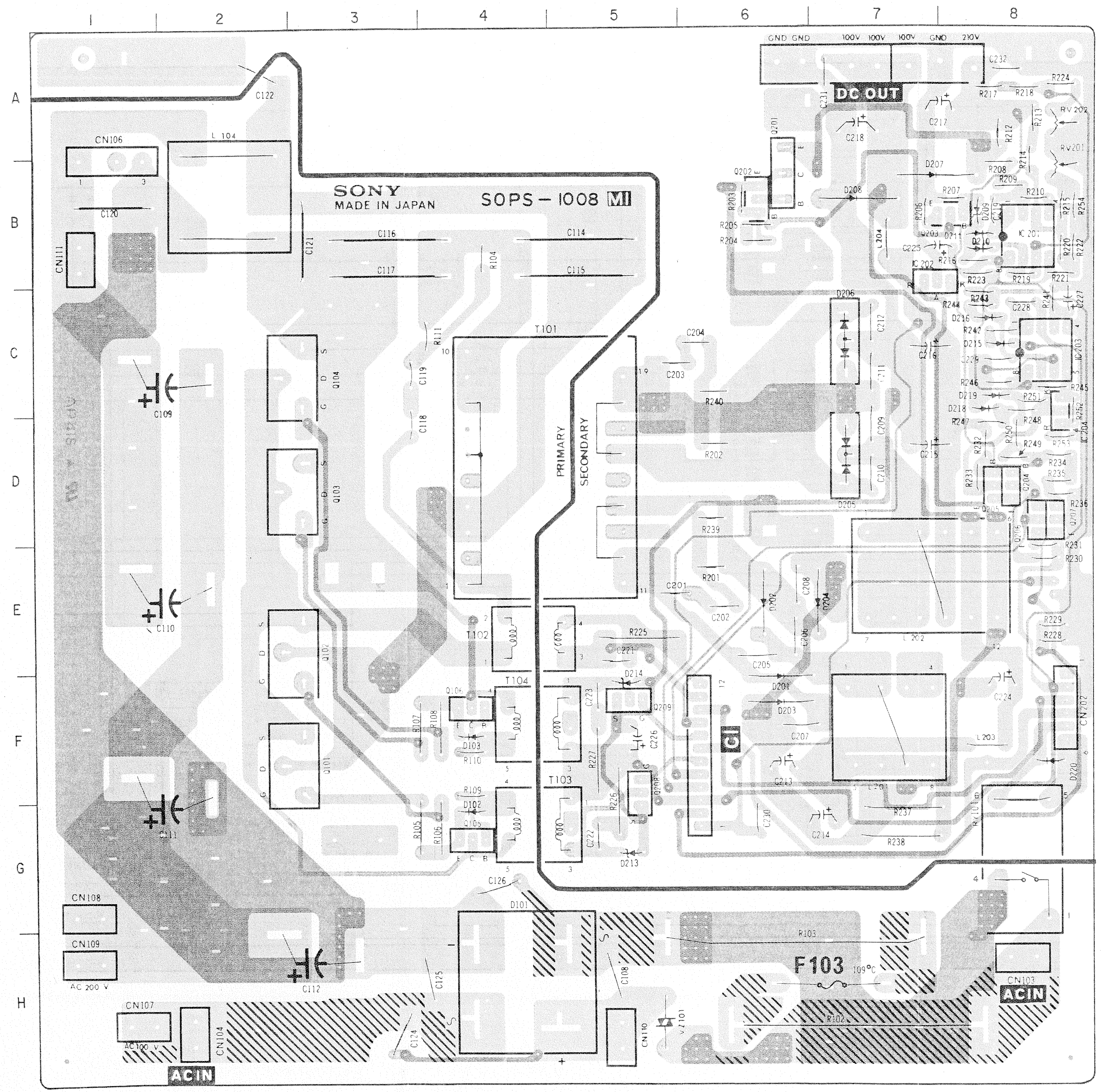

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
3P INLET
G
N
L
C901 0.1 250V
C902 0.1 250V
C903 0.1 250V
T901
F901 T16.3A 250V
R901 1M 1/2W
S901 (AC POWER)
WHT 1
2 BRN
VZ601 SNR-471KD14
R601 470k 1W
R602 470k 1W
T601 5MH
C601 1 250V
C602 1 250V
T602 5MH
C603 0.47μ 250V
C604 0.0015 250V
C605 0.0015 250V
M3B
WHT 3
4 BRN
CN103
CN104
CN110
CN111
CN107
CN108
CN109
DC (+)
NC
DC (0V)
CN106
RY101
D220 1SS119
R102 5.0 20W
F103 109C
R103 5.0 20W
C124 0.0047 400V
C108 0.0047 400V
D101 S15VB60
C125 0.0047 400V
C126 0.0047 400V
C110 2000 250V
C109 2000 250V
C112 2000 250V
C111 2000 250V
C120 0.33 400V
L104 5μH LFT
C121 0.33 400V
C122 0.0022 400V
C114 1 250V
C115 1 250V
C116 1 250V
C117 1 250V
Q101 2SK827
Q102 2SK827
Q103 2SK827
Q104 2SK827
R105 47 1/4W
R106 47 1/4W
R107 47 1/4W
R108 47 1/4W
D102 11EQS04
D103 11EQS04
R109 2.2k 1/4W
R110 2.2k 1/4W
Q105 2SB733
Q106 2SB733
T103
T104
R111 100 5W
R104 100 5W
C119 0.001 500V
C118 0.001 500V
T102
R255 4.7 2W RS5X
C221 0.068
T101
R226 470 1/2W
C222 0.015
D213 RD39ESB1
Q208 2SK422
R227 470 1/2W
C226 100 25V
C223 0.015
Q209 2SK422
D214 RD39ESB1
D201 ERC38-06
D202 ERC38-06
D203 ERC38-06
D204 ERC38-06
C201 330p 500V
C202 330p 500V
C205 100p 2kV
C206 100p 2kV
C207 100p 2kV
C208 100p 2kV
R201 1k 5W
R239 1k 5W
L201 22mH
C214 47 200V
C213 47 200V
R238 47k 2W
R237 47k 2W
L203
C224 47 200V
Q201 2SC3042
Q202 2SA1156
Q203 2SC2752
D207 U05G
R212 4.7 5W
R208 220k F
R209 220k F
R213 220k F
R203 10k
R204 100k
R205 100k
D209 RD5.6ESB2
R206 100
R207 1k
R202 1k 5W
R240 1k 5W
D205 ESAD39-06C
C209 220p 2kV
C210 220p 2kV
L202 1.36mH
C204 330p 500V
C203 330p 500V
D206 ESAD39-06N
C211 220p 2kV
C212 220p 2kV
C215 220 160V
C216 220 160V
L204
C218 220 160V
R210 10k F
D208 U05G
C231 100p 500V
R254 470 F
CN51-12
CN51-11
CN51-6
CN51-8
CN51-4
C51 0.001
C52 0.001
D51 11EQS04
D52 11EQS04
D53 11EQS04
D54 11EQS04
R51 270
L51 4.7μH
R52 1k
C53 0.47
15V
R56 22k
D56 11EQS04
D55 11EQS04
IC51 MB3759
VCC
DC
VDD
GND
RT
CT
D.C
JW51
R57 560k
R58 47k
C56 0.01
R59 100
C57 0.1
R61 2.2k
R54 1k
R53 1k
C54 100 25V
R62 2.2k
C58 47
R64 470k
R60 180k
D59 1SS119
D57 1SS119
R71 100k F
Q53 2SA1175
R66 5.6k
R68 680
D58 03P2M
R63 2.2k
R65 4.7k
R67 4.7k
R69 100
R70 2.2k
CN52
GND
SYN
TO C2 BOARD CN52
M1 (POWER SUPPLY)


8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
T101
T102
T103
T104
D201 ERC38-06
D202 ERC38-06
D203 ERC38-06
D204 ERC38-06
D205 ESAD39-06C
D206 ESAD39-06N
D207 U05G
D208 U05G
D209 RD5.6ESB2
D210 1SS119
D211 1SS119
D213 RD39ESB1
D214 RD39ESB1
D215 1SS119
D216 1SS119
D218 1SS120
D219 1SS120
L201 22mH
L202 1.36mH
L203
L204
Q201 2SC3042
Q202 2SA1156
Q203 2SC2752
Q204 2SA1175
Q205 2SA1175
Q206 2SA1175
Q207 2SA1175
Q208 2SK422
Q209 2SK422
Q101 2SK827
Q102 2SK827
Q103 2SK827
Q104 2SK827
Q105 2SB733
Q106 2SB733
D102 11EQS04
D103 11EQS04
IC201 μPC358C
IC202 TL431CLP
IC203 μPC358C
IC204 TL431CLP
IC51 MB3759
VCC OC VDD
GND RT CT D.C
JW51
D51 11EQS04
D52 11EQS04
D53 11EQS04
D54 11EQS04
D55 11EQS04
D56 11EQS04
D57 JSS119
D58 03P2M
D59 1SS119
Q53 2SA1175
L51 4.7μH
C1
15V
CN51
CN52
GND
SYN
TO C2 BOARD CN52
CN202
6 RELAY(-)
5 RELAY(+)
4 GND
3 VCC1
2 VCC2
1 STOP.S
TO M2 BOARD CN252
1 +210V
2 +100V
3 GND
TO DM BOARD DM-18
1 +100V
2 +100V
3
4 GND
5 GND
TO PA BOARD PA-2
GND

M1	IC201	μ PC358	CMP
	202	TL431C	2.5V REF VOLT
	203	μ PC358C	AMP
	204	TL431C	5.0V REF VOLT
	Q101	2SK827	CONV
	102	2SK827	CONV
	103	2SK827	CONV
	104	2SK827	CONV
	105	2SB733	SPEED UP
	106	2SB733	SPEED UP
	201	2SC3042	210V REG
	202	2SA1156	210V REG
	203	2SC2752	210V REG
	204	2SA1175	0V
	205	2SA1175	0V
	206	2SA1175	0V
	207	2SA1175	0V
	208	2SK422	DRIVE
	209	2SK422	DRIVE
	D101	S15VB60	AC RECT
	102	11EQS04	RECT
	103	11EQS04	RECT
	201	ERC33-06	210V RECT
	202	ERC33-06	210V RECT
	203	ERC33-06	210V RECT
	204	ERC33-06	210V RECT
	205	ESAD39-06C	100V RECT
	206	ESAD39-06N	100V RECT
	207	U05G	CLAMP
	208	U05G	CLAMP
	209	RD5.6ESB2	CORRECT
	210	1SS119	DC SHIFT
	211	1SS119	DC SHIFT
	213	RD39ESB	CLAMP
	214	RD39ESB	CLAMP
	215	1SS119	DC SHIFT
	216	1SS119	DC SHIFT
	218	1SS119	PROT
	219	1SS119	PROT
	220	1SS119	PROT

C1	IC051	MB3759	CONTROL
	Q053	2SA1175	AMP
	D051	11EQS04	RECT
	052	11EQS04	RECT
	053	11EQS04	RECT
	054	11EQS04	RECT
	055	11EQS04	CLAMP
	056	11EQS04	CLAMP
	057	1SS119	PROT
	058	03P2M	OFF
	059	1SS119	PROT

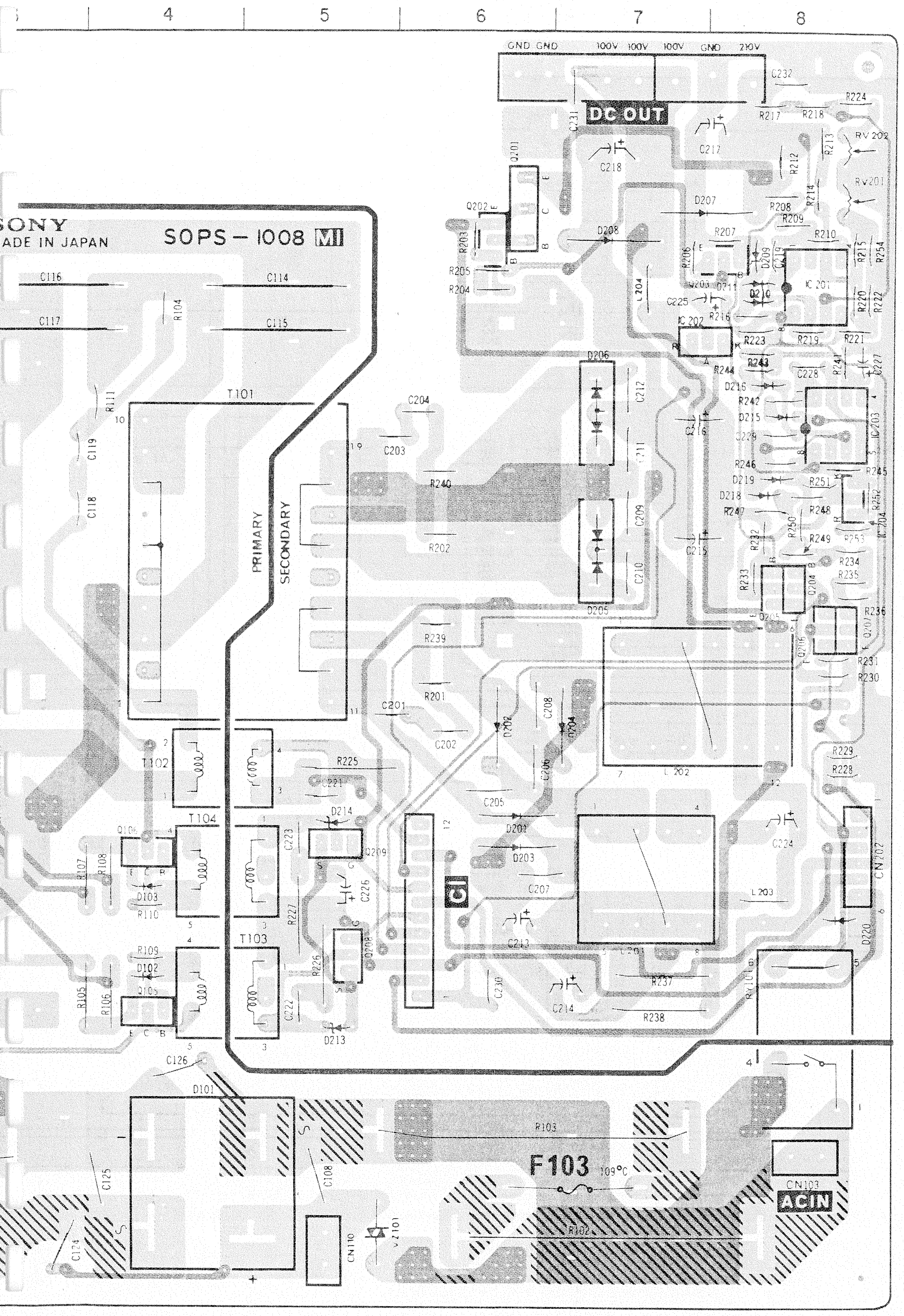
– M1 BOARD –


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
SONY
MADE IN JAPAN
SOPS – 1008 MI
DC OUT
GND GND 100V 100V 100V GND 210V
PRIMARY
SECONDARY
T101
T102
T104
T103
L104
L202
L203
L204
CN106
CN111
CN108
CN109
AC 200 V
CN107
AC100 V
CN104
CN110
CN103
CN202
ACIN
ACIN
F103
109°C
C109
C110
C111
C112
C120
C121
C122
C116
C117
C114
C115
C118
C119
C124
C125
C126
Q101
Q102
Q103
Q104
Q201
Q202
Q208
Q209
IC201
IC202
IC203
IC204
D101
D102
D103
D201
D202
D203
D204
D205
D206
D207
D208
D213
D214
D220
R102
R103
R104
R111
R201
R202
R225
R237
R238
R239
R240
RV201
RV202
C1

M1 BOARD

IC	
IC201	B - 8
IC202	B - 7
IC203	C - 8
IC204	D - 8
TRANSISTOR	
Q101	F - 3
Q102	E - 3
Q103	D - 3
Q104	C - 3
Q105	G - 4
Q106	F - 4
Q201	B - 6
Q202	B - 6
Q203	B - 8
Q204	D - 8
Q205	D - 8
Q206	D - 8
Q207	D - 8
Q208	F - 5
Q209	F - 5
DIODE	
D101	H - 4
D102	G - 4
D103	F - 4
D201	F - 6
D202	E - 6
D203	F - 6
D204	E - 7
D205	D - 7
D206	C - 7
D207	B - 7
D208	B - 7
D209	B - 8
D210	B - 8
D211	B - 8
D213	G - 5
D214	F - 5
D215	C - 8
D216	C - 8
D218	C - 8
D219	C - 8
D220	F - 8
ADJUSTING ELEMENT	
RV201	B - 8
RV202	A - 8

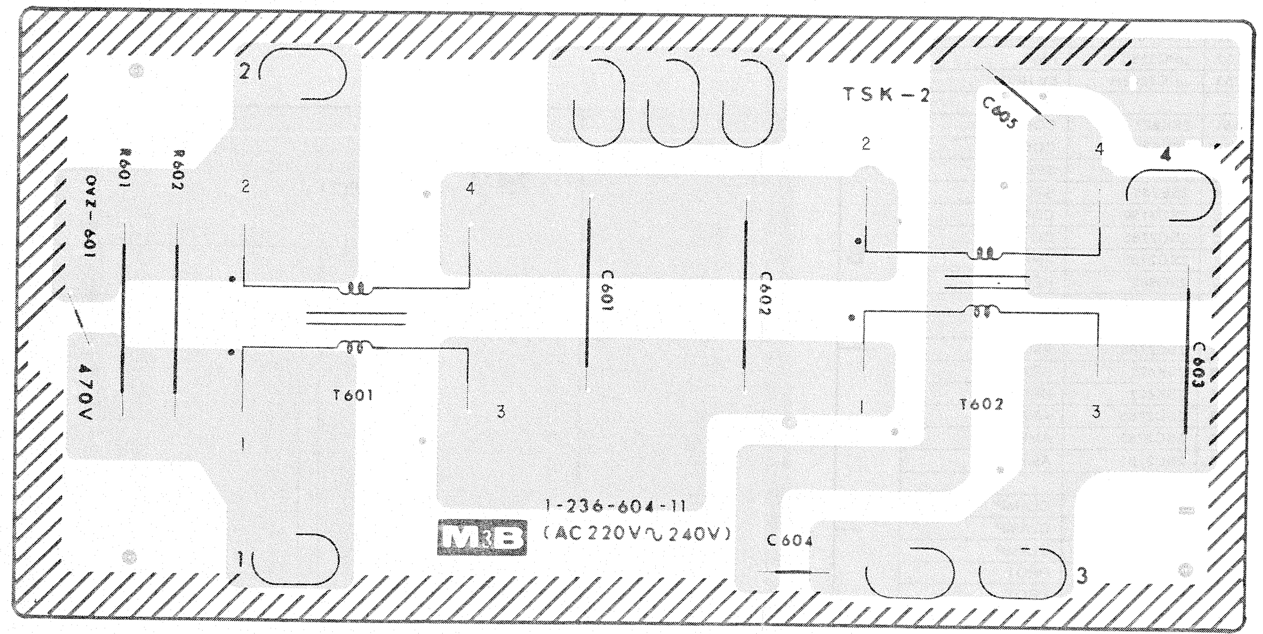
M1 M3B C1 [POWER SUPPLY]

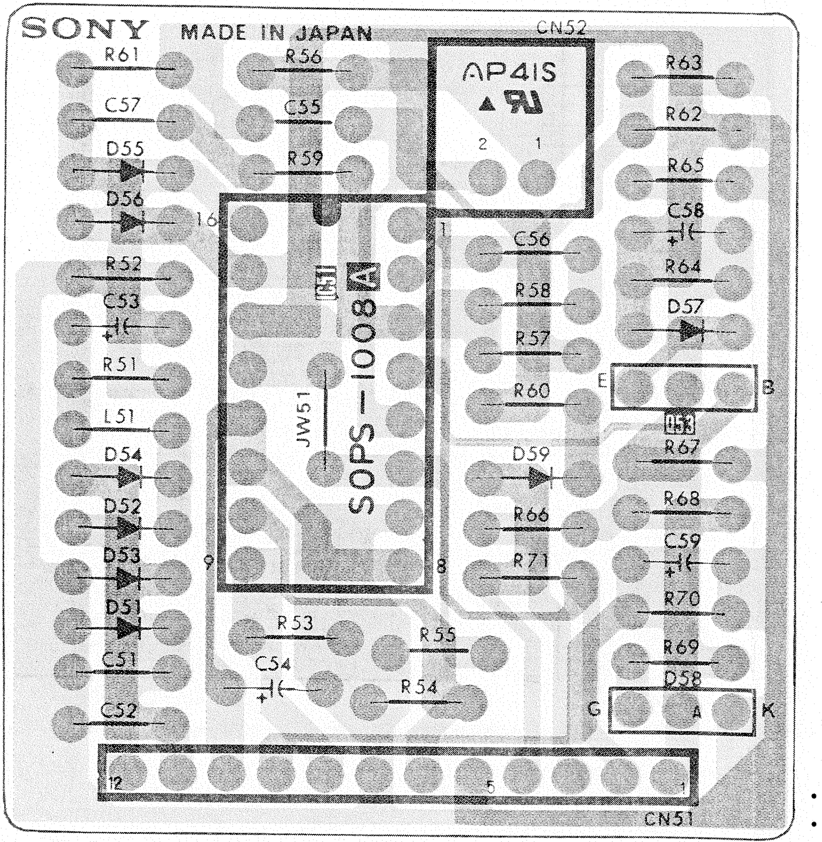

4
5
6
7
8
GND GND 100V 100V 100V GND 210V
DC OUT
SONY
MADE IN JAPAN
SOPS-1008 M1
T101
PRIMARY
SECONDARY
T102
T104
T103
IC201
IC202
L202
L203
CN202
C1
F103
109°C
CN103
ACIN
CN110

M1 BOARD

IC	
IC201	B - 8
IC202	B - 7
IC203	C - 8
IC204	D - 8
TRANSISTOR	
Q101	F - 3
Q102	E - 3
Q103	D - 3
Q104	C - 3
Q105	G - 4
Q106	F - 4
Q201	B - 6
Q202	B - 6
Q203	B - 8
Q204	D - 8
Q205	D - 8
Q206	D - 8
Q207	D - 8
Q208	F - 5
Q209	F - 5
DIODE	
D101	H - 4
D102	G - 4
D103	F - 4
D201	F - 6
D202	E - 6
D203	F - 6
D204	E - 7
D205	D - 7
D206	C - 7
D207	B - 7
D208	B - 7
D209	B - 8
D210	B - 8
D211	B - 8
D213	G - 5
D214	F - 5
D215	C - 8
D216	C - 8
D218	C - 8
D219	C - 8
D220	F - 8
ADJUSTING ELEMENT	
RV201	B - 8
RV202	A - 8

– M3B BOARD –

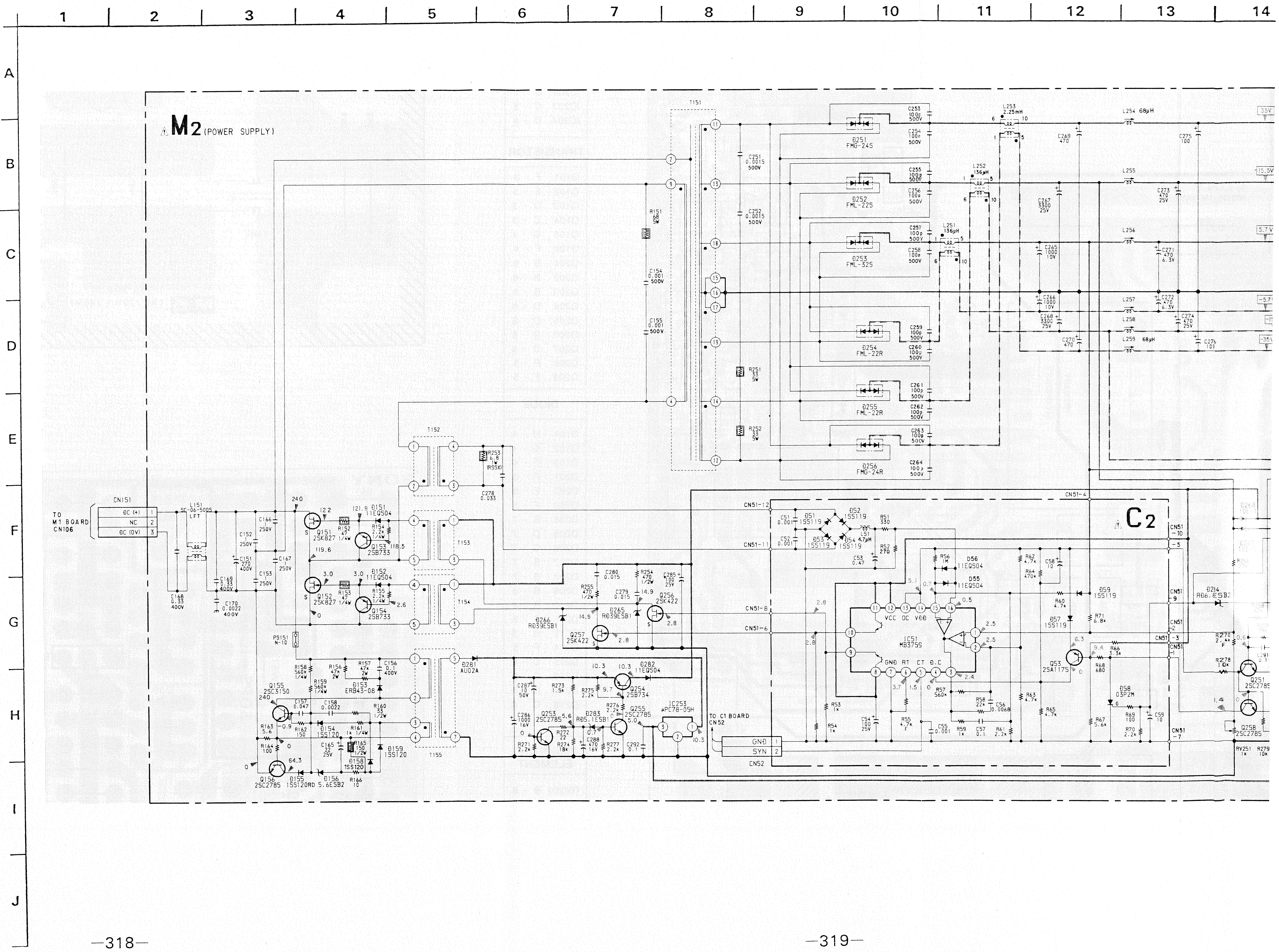

TSK-2
C605
R601
R602
OVZ-601
470V
C601
C602
C603
T601
T602
C604
1-236-604-11
M3B
(AC220V∿240V)


SONY
MADE IN JAPAN
CN52
AP4IS
SOPS-1008 A
JW51
CN51

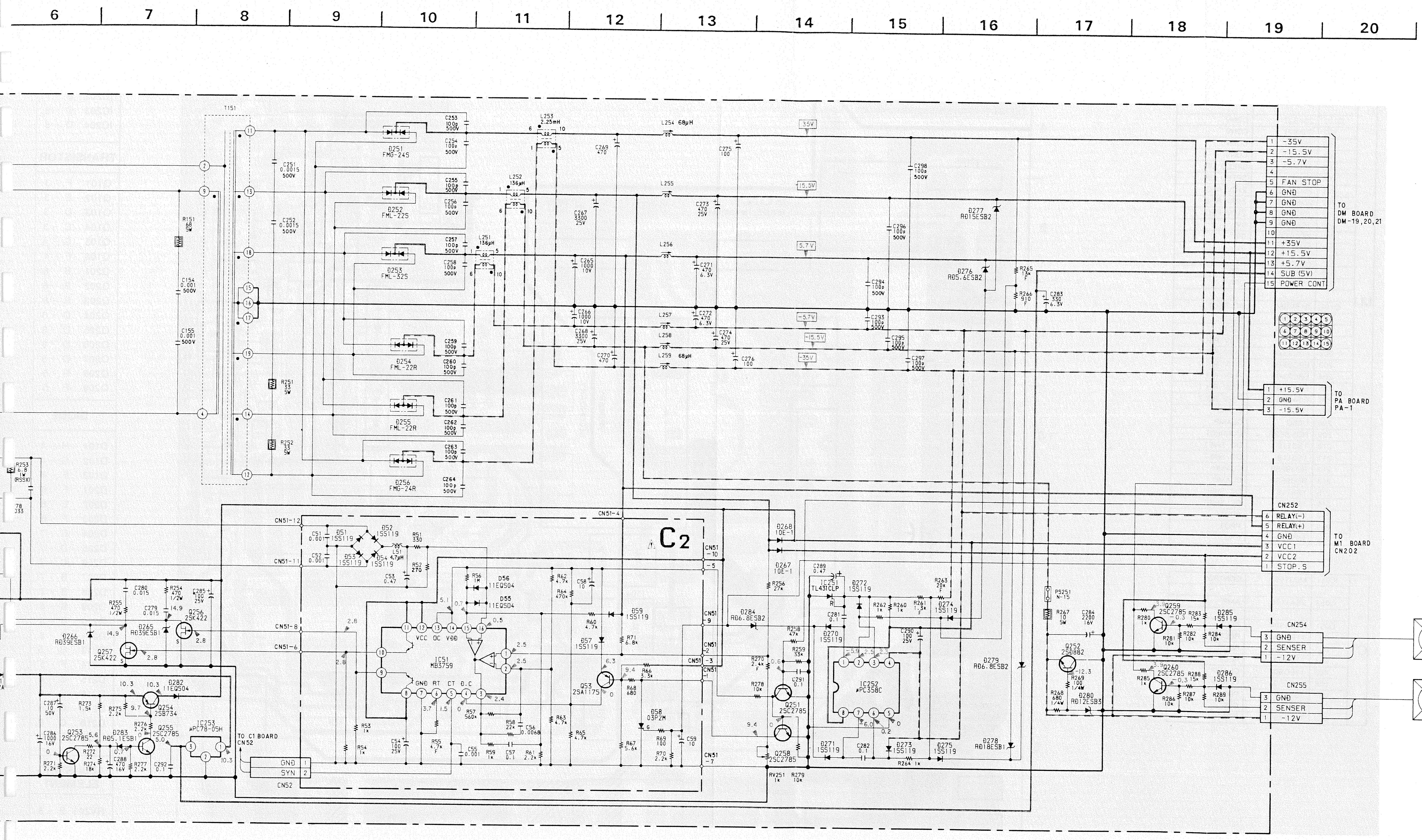
- ░ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

M2	IC251	TL431C	2.5V REF
	252	μPC358C	AMP
	253	μPC7805H	5V REG
	Q151	2SK827	CONV
	152	2SK827	CONV
	153	2SB733	SPEED UP
	154	2SB733	SPEED UP
	155	2SC3150	CONV
	156	2SC2785	OC
	251	2SC2785	AMP
	252	2SD882	REG
	253	2SC2785	AMP
	254	2SB734	REG
	255	2SC2785	AMP
	256	2SK422	DRIVE
	257	2SK422	DRIVE
	258	2SC2785	AMP
	259	2SC2785	AMP
	260	2SC2785	AMP
	D151	11EQS04	CLAMP
	152	11EQS04	CLAMP
	153	ERB43-08	CLAMP
	154	1SS120	PROT
	155	1SS120	PROT
	156	RD5.6ESB2	REF VOLT
	158	1SS120	RECT
	159	1SS120	RECT
	251	FMG-24S	35V RECT
	252	FML-22S	15.5V RECT
	253	FML-32S	5.7V RECT
	254	FML-22R	–5.7V RECT
	255	FML-22R	–15.5V RECT
	256	FMG-24R	–35V RECT
	265	RD39ESB	CLAMP
	266	RD39ESB	CLAMP
	267	10E-1	PROT
	268	10E-1	PROT
	270	1SS119	DC SHIFT
	271	1SS119	DC SHIFT
	272	1SS119	PROT
	273	1SS119	PROT
	274	1SS119	PROT
	275	1SS119	PROT
	276	RD5.6ESB2	0V
	277	RD15ESB2	0V
	278	RD18ESB1	0V
	279	RD6.8ESB2	0V
	280	RD12ESB3	REF VOLT
	281	AU02A	RECT
	282	11EQS04	PROT
	283	RD5.1ESB1	DC SHIFT
	284	RD6.8ESB2	CLAMP
	285	1SS119	PROT
	286	1SS119	PROT

C2	IC51	MB3759	CONTROL
	Q53	2SA1175	AMP
	D51	1SS119	RECT
	52	1SS119	RECT
	53	1SS119	RECT
	54	1SS119	RECT
	55	1SS119	CLAMP
	56	1SS119	CLAMP
	57	1SS119	PROT
	58	03P2M	OFF
	59	1SS119	PROT

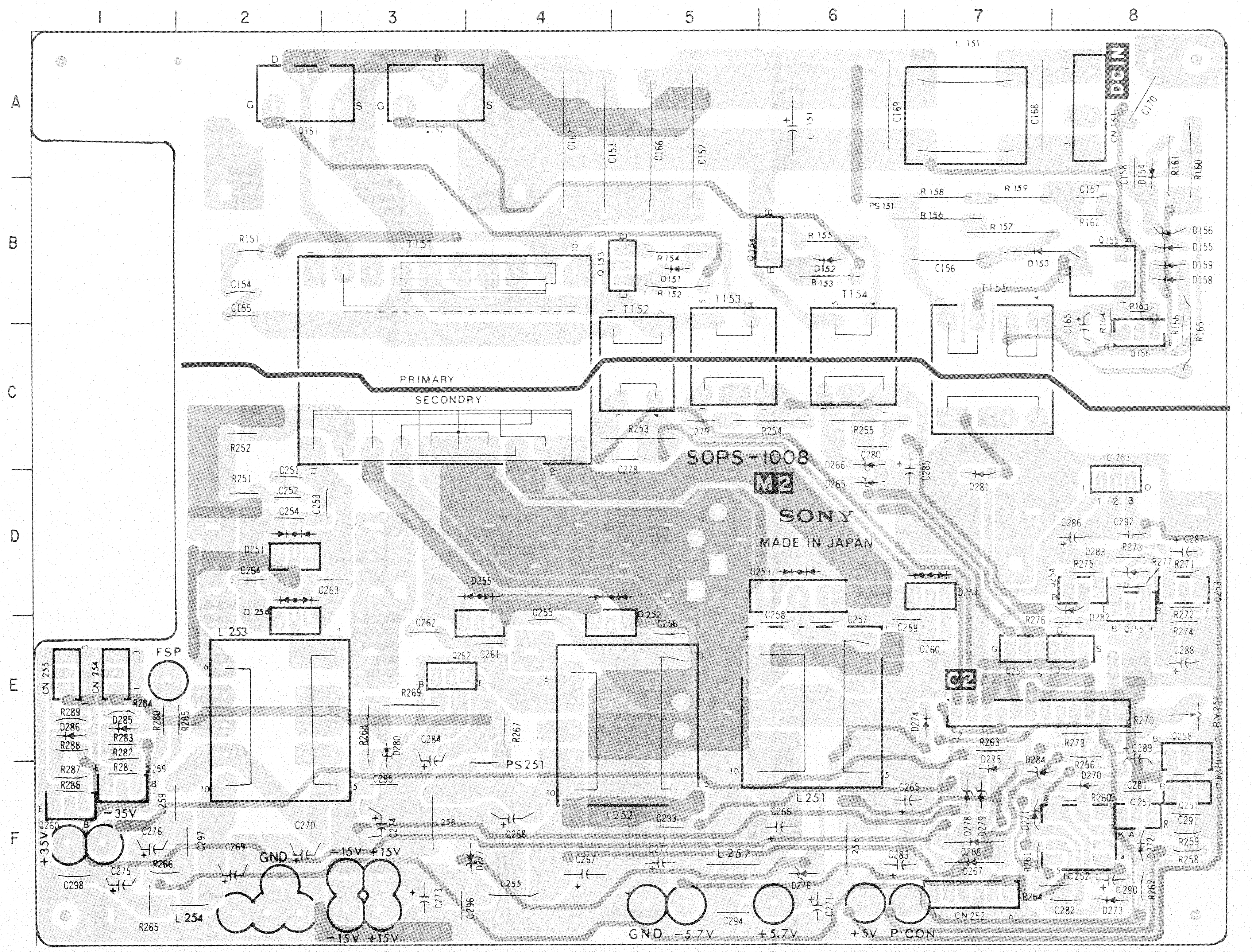


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
M2 (POWER SUPPLY)
C2
TO M1 BOARD CN106
CN151
DC (+)
NC
DC (0V)
L151
T151
T152
T153
T154
T155
D251 FMG-24S
D252 FML-22S
D253 FML-32S
D254 FML-22R
D255 FML-22R
D256 FMG-24R
L253 2.25mH
L254 68μH
L252 136μH
L251 136μH
L259 68μH
35V
15.5V
5.7V
-35V
IC51 MB3759
VCC
DC
VDD
GND
RT
CT
D.C
IC253 μPC78-05H
TO C1 BOARD CN52
GND
SYN
CN52
CN51-12
CN51-11
CN51-8
CN51-6
CN51-4
Q151 2SK827
Q152 2SK827
Q153 2SB733
Q154 2SB733
Q155 2SC3150
Q156 2SC2785
Q253 2SC2785
Q254 2SB734
Q255 2SC2785
Q256 2SK422
Q257 2SK422
Q53 2SA1175
Q251 2SC2785
Q258 2SC2785
PS151 N-10
D281 AU02A
D282 11EQS04
D153 ERB43-08


6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
T151
C2
D251 FMG-24S
D252 FML-22S
D253 FML-32S
D254 FML-22R
D255 FML-22R
D256 FMG-24R
L253 2.25mH
L252 136μH
L251 136μH
L254 68μH
L255
L256
L257
L258
L259 68μH
35V
15.5V
5.7V
-5.7V
-15.5V
-35V
-35V
-15.5V
-5.7V
FAN STOP
GND
+35V
+15.5V
+5.7V
SUB (5V)
POWER CONT
TO DM BOARD DM-19,20,21
+15.5V
GND
-15.5V
TO PA BOARD PA-1
CN252
RELAY(-)
RELAY(+)
GND
VCC1
VCC2
STOP.S
TO M1 BOARD CN202
CN254
CN255
GND
SENSER
-12V
FAN
FAN
IC51 MB3759
IC251 TL431CLP
IC252 μPC358C
IC253 μPC78-05H
Q251 2SC2785
Q252 2SD882
Q253 2SC2785
Q254 2SB734
Q255 2SC2785
Q256 2SK422
Q257 2SK422
Q258 2SC2785
Q259 2SC2785
Q260 2SC2785
Q53 2SA1175
D55 11EQS04
D56 11EQS04
D57 1SS119
D58 03P2M
D59 1SS119
D282 11EQS04
D283 R05.1ESB1
D265 R03.9ESB1
D266 R03.9ESB1
D284 R06.8ESB2
D276 R05.6ESB2
D277 R01.5ESB2
D278 R01.8ESB1
D279 R06.8ESB2
D280 R01.2CSB3
PS251 N-15
CN51
CN52
TO C1 BOARD CN52
GND
SYN
VCC
OC
VDD
GND
RT
CT
D.C

M2 [POWER SUPPLY]

– M2 BOARD –


1
2
3
4
5
6
7
8
A
B
C
D
E
F
SOPS-1008
M2
SONY
MADE IN JAPAN
PRIMARY
SECONDARY
DC IN
C2
T151
T152
T153
T154
T155
L151
L251
L252
L253
L254
L255
L257
PS151
PS251
FSP
CN251
CN252
CN254
CN255
IC251
IC252
IC253
RV251
GND
–5.7V
+5.7V
+5V
P-CON
–15V
+15V
+35V
–35V

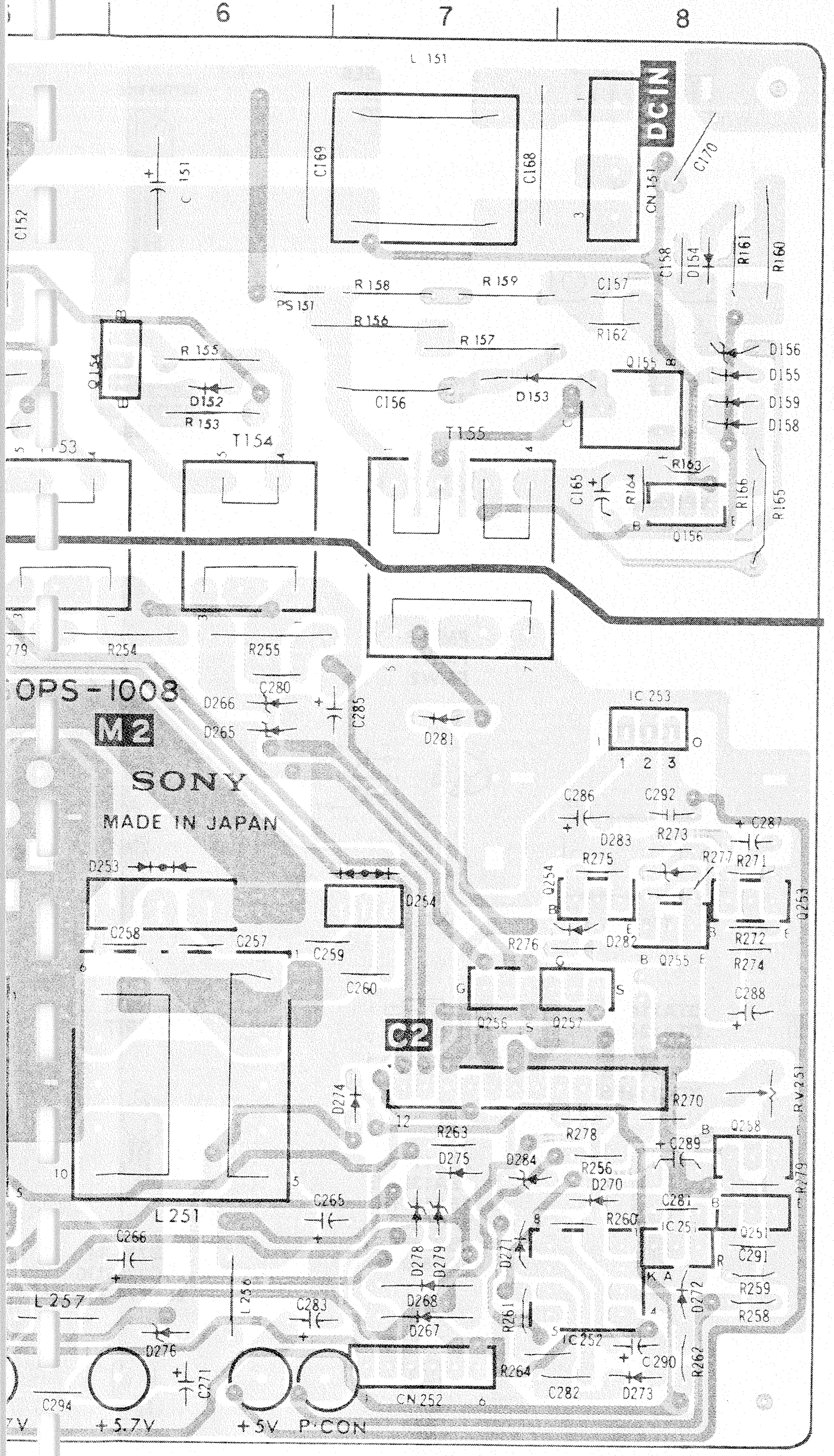
M2 BOARD

IC	
IC251	F - 8
IC252	F - 8
IC253	D - 8

ADJUSTING ELEMENT	
RV251	E - 8

TRANSISTOR	
Q151	A - 2
Q153	A - 3
Q153	B - 5
Q154	B - 6
Q155	B - 6
Q156	C - 8
Q251	F - 8
Q252	E - 3
Q253	D - 8
Q254	D - 8
Q255	D - 8
Q256	E - 7
Q257	E - 8
Q258	E - 8
Q259	F - 1
Q260	F - 1

DIODE	
D151	B - 5
D152	B - 6
D153	B - 7
D154	A - 8
D155	B - 8
D156	B - 8
D158	B - 8
D159	B - 8
D251	D - 2
D252	E - 5
D253	D - 6
D254	D - 7
D255	D - 4
D256	D - 2
D265	D - 6
D266	C - 6
D267	F - 7
D268	F - 7
D270	F - 8
D271	F - 7
D272	F - 8
D273	F - 8
D274	E - 7
D275	F - 7
D276	F - 6
D277	F - 4
D278	F - 7
D279	F - 7
D280	E - 3
D281	D - 7
D282	D - 8
D283	D - 8
D284	F - 7
D285	E - 1
D286	E - 1


6
7
8
DC IN
OPS-1008
M2
SONY
MADE IN JAPAN
C2
L151
C169
C168
CN151
C170
R161
R160
C152
C151
R158
R159
C157
R162
PS151
R156
R157
R155
D152
R153
Q154
C156
D153
Q155
D156
D155
D159
D158
T154
T155
C165
R164
R163
R166
R165
Q156
R254
R255
D266
D265
C280
C285
D281
IC253
1 2 3
C286
C292
C287
D283
R273
R275
R277
R271
D253
D254
D282
Q253
C258
C257
C259
C260
R276
Q255
R272
R274
C288
Q256
Q257
R270
RV251
D274
R263
R278
C289
Q258
D275
D284
R256
D270
R260
R279
L251
C265
C266
D278
D279
D271
C281
IC251
Q251
C291
R259
R258
L257
L256
C283
D268
D267
R261
D272
D276
IC252
C290
R262
C294
C271
R264
C282
D273
CN252
+5.7V
+5V
P.CON

M2 BOARD

IC	
IC251	F - 8
IC252	F - 8
IC253	D - 8

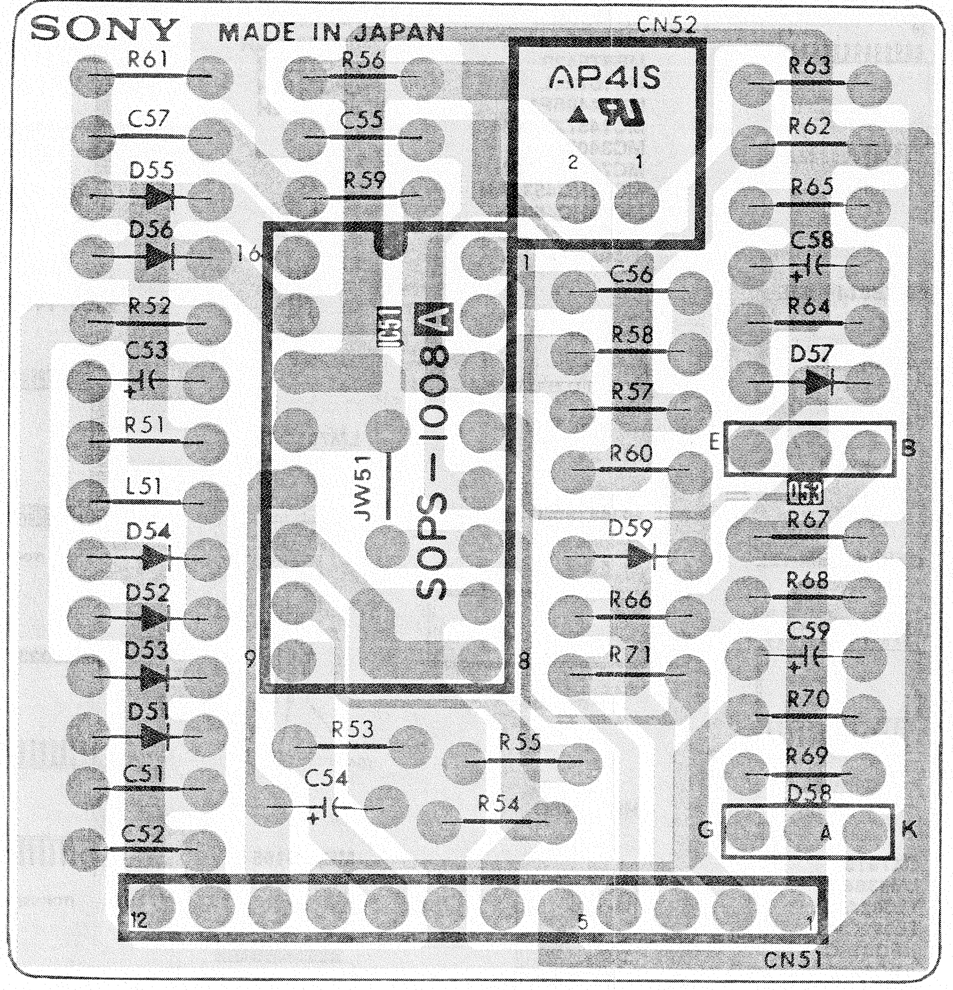
ADJUSTING ELEMENT	
RV251	E - 8

TRANSISTOR	
Q151	A - 2
Q153	A - 3
Q153	B - 5
Q154	B - 6
Q155	B - 6
Q156	C - 8
Q251	F - 8
Q252	E - 3
Q253	D - 8
Q254	D - 8
Q255	D - 8
Q256	E - 7
Q257	E - 8
Q258	E - 8
Q259	F - 1
Q260	F - 1

DIODE	
D151	B - 5
D152	B - 6
D153	B - 7
D154	A - 8
D155	B - 8
D156	B - 8
D158	B - 8
D159	B - 8
D251	D - 2
D252	E - 5
D253	D - 6
D254	D - 7
D255	D - 4
D256	D - 2
D265	D - 6
D266	C - 6
D267	F - 7
D268	F - 7
D270	F - 8
D271	F - 7
D272	F - 8
D273	F - 8
D274	E - 7
D275	F - 7
D276	F - 6
D277	F - 4
D278	F - 7
D279	F - 7
D280	E - 3
D281	D - 7
D282	D - 8
D283	D - 8
D284	F - 7
D285	E - 1
D286	E - 1

C2 [POWER SUPPLY]

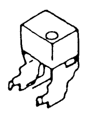
– C2 BOARD –


SONY
MADE IN JAPAN
CN52
AP41S
2
1
R61
C57
D55
D56
R52
C53
R51
L51
D54
D52
D53
D51
C51
C52
R56
C55
R59
16
IC51
SOPS-1008A
JW51
9
8
1
R53
C54
R55
R54
C56
R58
R57
R60
D59
R66
R71
R63
R62
R65
C58
R64
D57
E
B
Q53
R67
R68
C59
R70
R69
D58
G
A
K
12
5
1
CN51

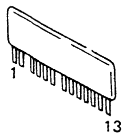
- ▒ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

7-5. SEMICONDUCTORS

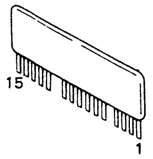
BX1398



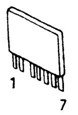
BX-6473



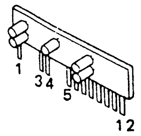
BX-6474



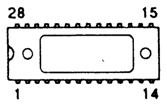
BX-6475



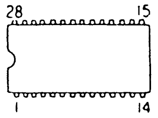
BX7913



CXA1158P

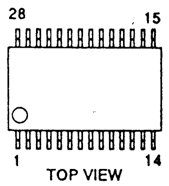


CXA1216P
MBM27C512-20
TDA4555/V1



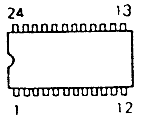
(TOP VIEW)

CXK3864-040M
CXK3864-041M
CXK3864-042M



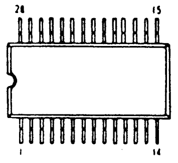
TOP VIEW

CXK5814P-45L



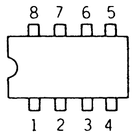
(TOP VIEW)

CXK5864BM-12L



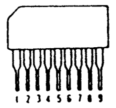
(TOP VIEW)

CX7916
LM6364N
TL082ACP
TL082CP
µPC318C
µPC393C
µPC4082C
µPC4558C
µ PC814C

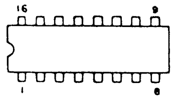


(TOP VIEW)

CX-894

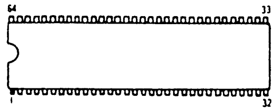


HD10124
HD14053BF
HD14053BFP
HD14538BFP
HD14538BP
HD74HC123AP
MB675429
MC10124L
MC14495P1
MC14572UBCP
MC34051P
MC74HC4053N
MC74HC4538AN
MC74HC4538N
SN74S124N
TC4040BP



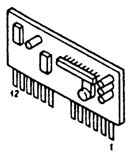
(TOP VIEW)

HD64180R1P8

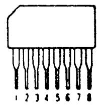


(TOP VIEW)

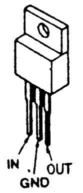
H8B7178B



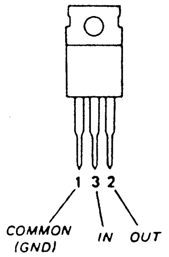
LA7016



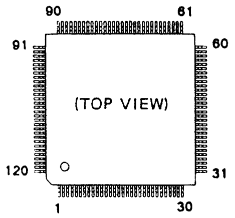
LA7812CT
M5F78M12L
RC7808FA
RC7812FA
TA7805S
µPC78M12H
µPC7805H
µPC7808H
µPC7812H



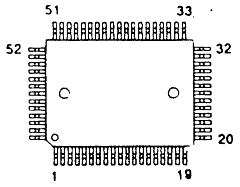
LM7912CT
µPC7812H


1 3 2
COMMON (GND)
IN
OUT

MB605195

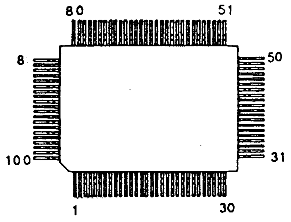

90
61
91
60
(TOP VIEW)
120
31
1
30

MB654842UPF

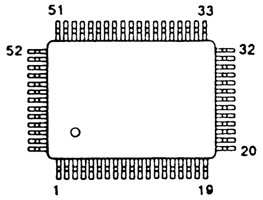

51
33
52
32
20
1
19

(TOP VIEW)

MB670840PF
µPD78C10AGF-3BE

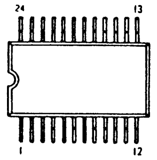

80
51
8
50
100
31
1
30

MB671469PF


51
33
52
32
20
1
19

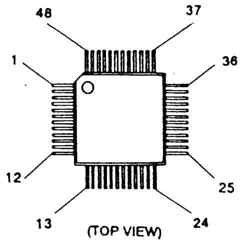
(TOP VIEW)

MB86023

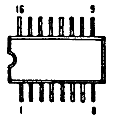


(TOP VIEW)

MB8855-1314N

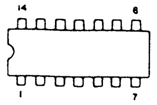

48
37
1
36
12
25
13
(TOP VIEW)
24

MC14053BF
SN74HC138ANS
SN74HC157ANS
TC74HC123AF
TC74HC123F



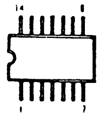
(TOP VIEW)

MC1495L
MC74HC00AN
MC74HC132N
SN74HC132AN
µPC1394C



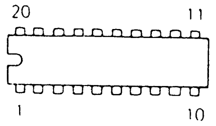
(TOP VIEW)

MC74F00M
MC74HC00AF
MC74HC14AF
SN74HC04ANS
SN74HC107ANS
SN74HC126ANS
SN74HC14ANS
SN74HC32ANS
SN74LS12NS



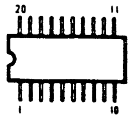
(TOP VIEW)

MC74HC244AN
SN74HC244AN
TC74HC541AP



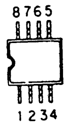
(TOP VIEW)

MC74HC541F

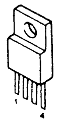


(TOP VIEW)

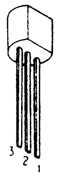
NJM2228M
µPC393G2
µPC4558G2
µPC814G2-1



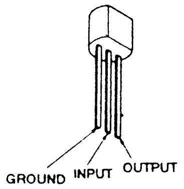
PQ05RF1



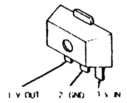
RC78L05A



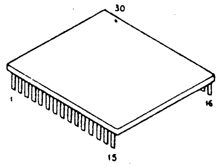
RC79L12A


GROUND
INPUT
OUTPUT

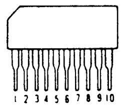
RH5VA33CA
RH5VA33CC


1 V OUT
2 (GND)
3 V IN

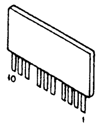
SBX1692-01



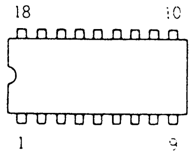
SNY-8C02


1 2 3 4 5 6 7 8 9 10

SNY-9202

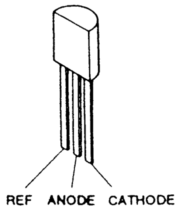


TDA4565

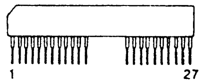


(TOP VIEW)

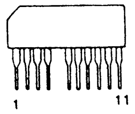
TL431CLP
TL431CLPB


REF
ANODE
CATHODE

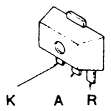
TY885002A



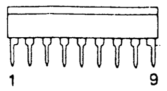
TY885003A



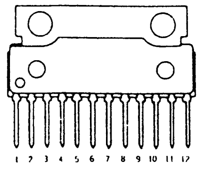
µPC-1093T



µPC1406HA

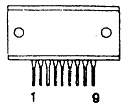


µPC1498H

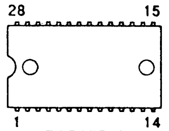

1 2 3 4 5 6 7 8 9 10 11 12

MARKING SIDE VIEW

VPH05A

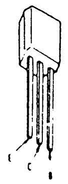


X28C64PI

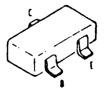


TOP VIEW

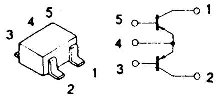
DTA114TS
DTA124ES
DTC124ES
DTC144ES
XDC114ES



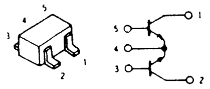
DTC144EK
2SA1162G
2SA1162-YG
2SA1462-Y33
2SA812
2SC1623-L5L6
2SC1623-L6
2SC2712-YG
2SC3545



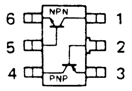
FMS1
FMS2


5
4
3
1
2
5
4
3
1
2

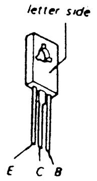
FMW-8
FMW1
FMW2


5
4
3
1
2
5
4
3
1
2

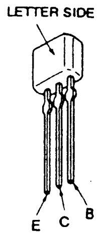
IMX2


6
5
4
NPN
PNP
1
2
3

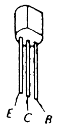
2SA1142-P
2SA1381-E
2SA1407-D
2SC2688
2SC2688-LK
2SD882-Q


letter side
E
C
B

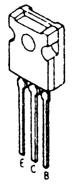
2SA1175
2SA1175-HFE
2SC2785
2SC2785-HFE


LETTER SIDE
E
C
B

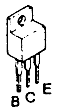
2SA1208-S
2SC2910
2SD789-34
2SD789-4



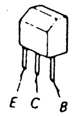
2SA1358-Y
2SC3421-Y



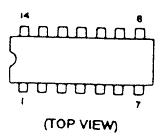
2SB1315
2SD1977



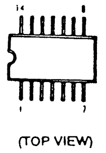
2SB734-34
2SC3209LK
2SD774-34



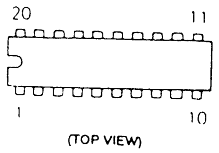
MC1495L
MC74HC00AN
MC74HC132N
SN74HC132AN
µPC1394C


14
8
1
7
(TOP VIEW)

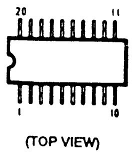
MC74F00M
MC74HC00AF
MC74HC14AF
SN74HC04ANS
SN74HC107ANS
SN74HC126ANS
SN74HC14ANS
SN74HC32ANS
SN74LS12NS


14
8
1
7
(TOP VIEW)

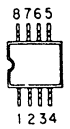
MC74HC244AN
SN74HC244AN
TC74HC541AP


20
11
1
10
(TOP VIEW)

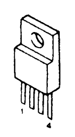
MC74HC541F


20
11
1
10
(TOP VIEW)

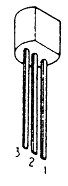
NJM2228M
µPC393G2
µPC4558G2
µPC814G2-1



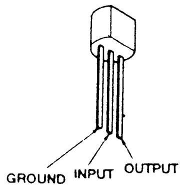
PQ05RF1



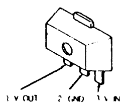
RC78L05A



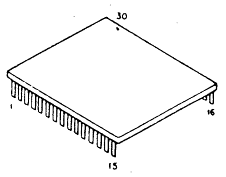
RC79L12A


GROUND
INPUT
OUTPUT

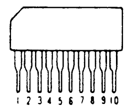
RH5VA33CA
RH5VA33CC


1 V OUT
2 GND
3 V IN

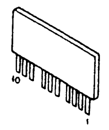
SBX1692-01



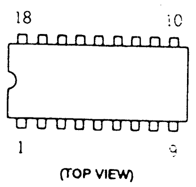
SNY-8C02


1 2 3 4 5 6 7 8 9 10

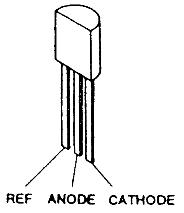
SNY-9202



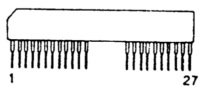
TDA4565


18
10
1
9
(TOP VIEW)

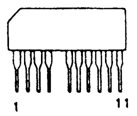
TL431CLP
TL431CLPB


REF
ANODE
CATHODE

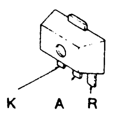
TY885002A



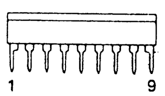
TY885003A



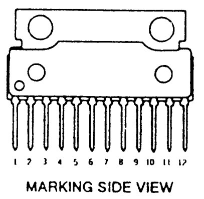
µPC-1093T



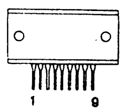
µPC1406HA



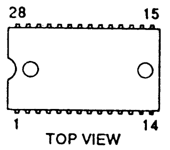
µPC1498H


1 2 3 4 5 6 7 8 9 10 11 12
MARKING SIDE VIEW

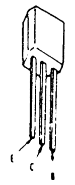
VPH05A



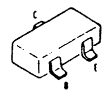
X28C64PI


28
15
1
14
TOP VIEW

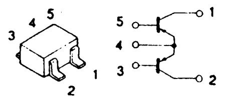
DTA114TS
DTA124ES
DTC124ES
DTC144ES
XDC114ES



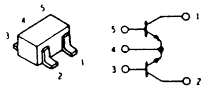
DTC144EK
2SA1162G
2SA1162-YG
2SA1462-Y33
2SA812
2SC1623-L5L6
2SC1623-L6
2SC2712-YG
2SC3545



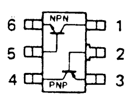
FMS1
FMS2


4
5
3
1
2
5
4
3
1
2

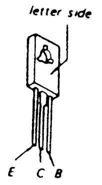
FMW-8
FMW1
FMW2



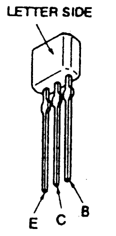
IMX2


6
5
4
NPN
PNP
1
2
3

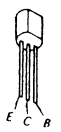
2SA1142-P
2SA1381-E
2SA1407-D
2SC2688
2SC2688-LK
2SD882-Q


letter side
E
C
B

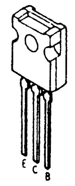
2SA1175
2SA1175-HFE
2SC2785
2SC2785-HFE


LETTER SIDE
E
C
B

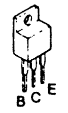
2SA1208-S
2SC2910
2SD789-34
2SD789-4



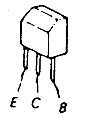
2SA1358-Y
2SC3421-Y



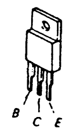
2SB1315
2SD1977



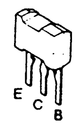
2SB734-34
2SC3209LK
2SD774-34



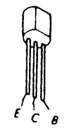
2SB861-C
2SC3675
2SD1138C
2SD982



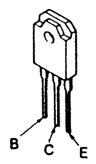
2SC1428-Y



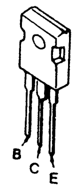
2SC2551-O



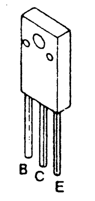
2SC2555-1
2SC2555-2
2SD1403



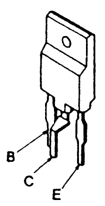
2SC3998
2SC3998CA



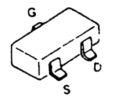
2SC4054N



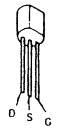
2SD1887-CA



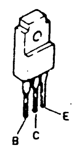
2SK160-K5
2SK160-K6



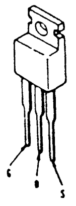
2SK523-M1



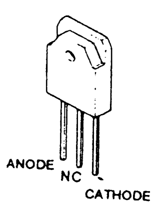
2SK755



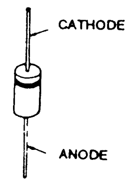
2SJ143
2SK817
2SK929



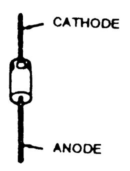
DD50R


ANODE
NC
CATHODE

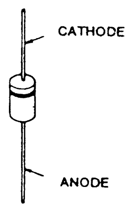
EGP10D
EGP10G
ERC38-06
1SS83


CATHODE
ANODE

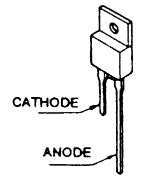
ERA22-06
ERA22-08


CATHODE
ANODE

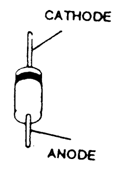
ERC06-15S
ERC91-02
RS3FS
RU-1
RU-1C


CATHODE
ANODE

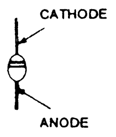
ERC88-009


CATHODE
ANODE

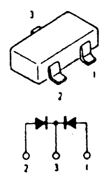
ERD29-08J
ERD33-02


CATHODE
ANODE

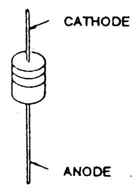
GH3F
V06C
V09G
V11N
V19E
V19EF1


CATHODE
ANODE

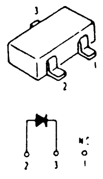
MA152WK
1S2837



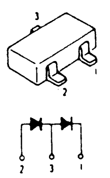
RD10ES-B2
RD12ES-B2
RD13ES-B2
RD15ES-B2
RD2.0ES-B2
RD3.3ES-B2
RD39ES-B2
RD5.1ES-B2
RD5.6ES-B2
RD6.2ES-B2
WG713A
1SS119


CATHODE
ANODE

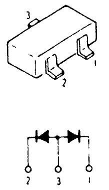
RD12M-B2
RD13M-B2
RD2.4M-B
RD3.3M-B2
RD4.3M-B1
RD5.1M-B2
RD6.2M-B1



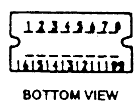
1SS123
1SS226



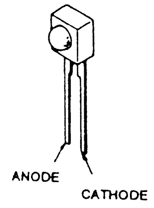
1S2835
1S2836



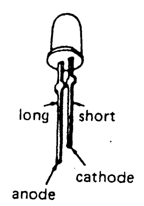
GL-6R202


BOTTOM VIEW

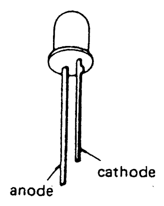
LN25RP
TLR214


ANODE
CATHODE

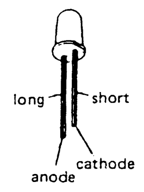
PY5504S-1


long
short
anode
cathode

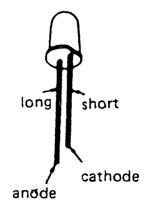
SLR-54VC12


anode
cathode

TLG113A


long
short
anode
cathode

TLR113A


long
short
anode
cathode

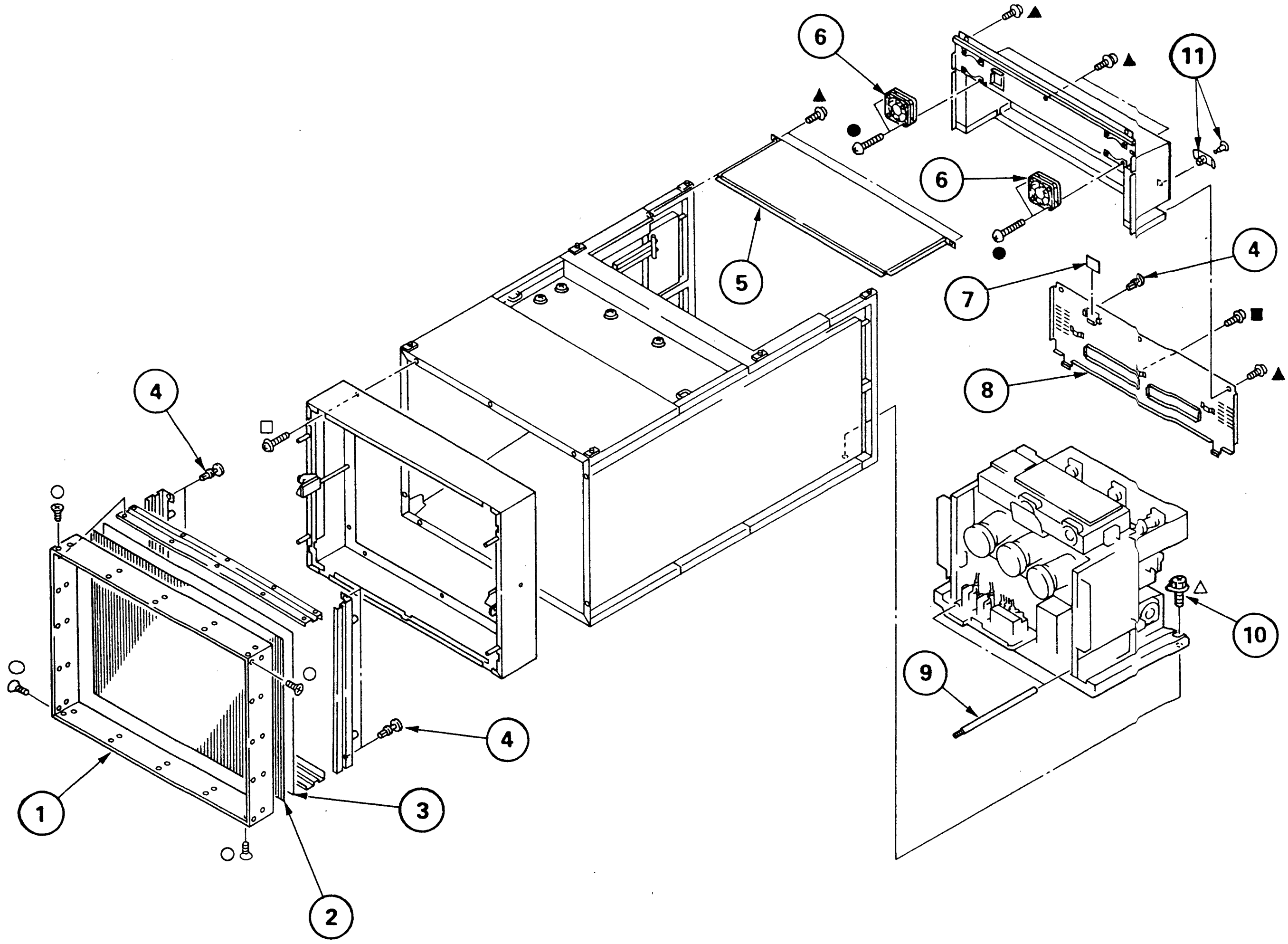
SECTION 8
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

8-1. CABINET

○: 7-685-246-19 +KTP3×8
□: 7-685-663-79 +ITTP4×16
●: 7-685-666-79 +BVTP4×30
■: 7-682-950-09 +PSW3×12
▲: 7-682-562-04 +SCREW, TERMINAL (M4×10)

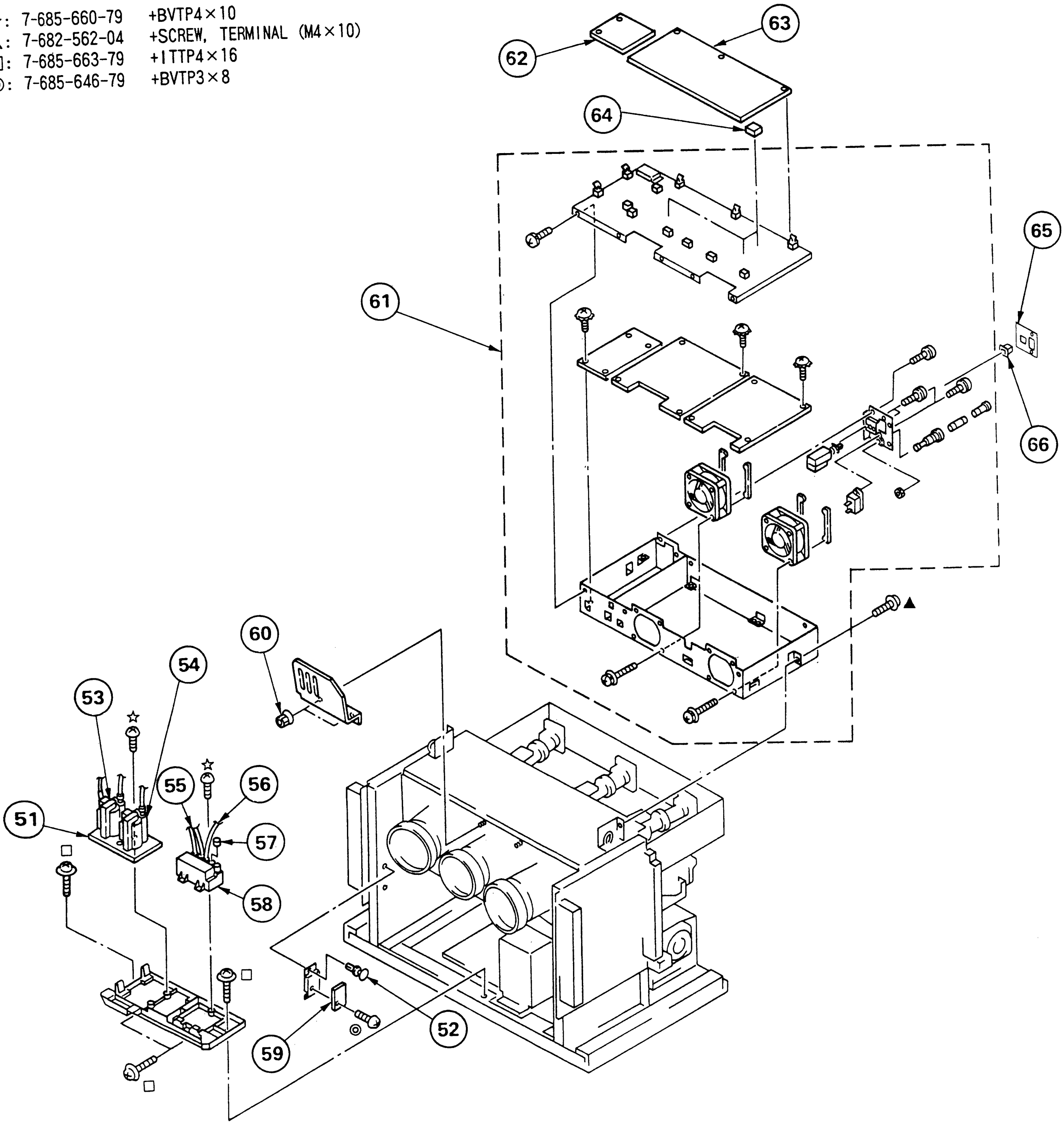


REF.NO.	PART NO.	DESCRIPTION	REMARK
1	*4-032-536-01	HOLDER, SCREEN	
2	4-032-513-01	ILLUMINATOR (L)	
3	4-032-514-01	ILLUMINATOR (TFF)	
4	4-374-303-01	RIVET, NYLON	
5	*4-032-468-01	COVER (RE), PLATE	
6	1-541-703-11	FAN, DC	
7	4-035-261-01	FILTER	
8	*X-4029-772-1	COVER (B) ASSY	
9	4-032-515-01	BOLT, CHASSIS	
10	4-034-223-01	BOLT, HEXAGON	
11	4-035-268-01	CLIP, C GUARD	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

8-2. POWER BLOCK

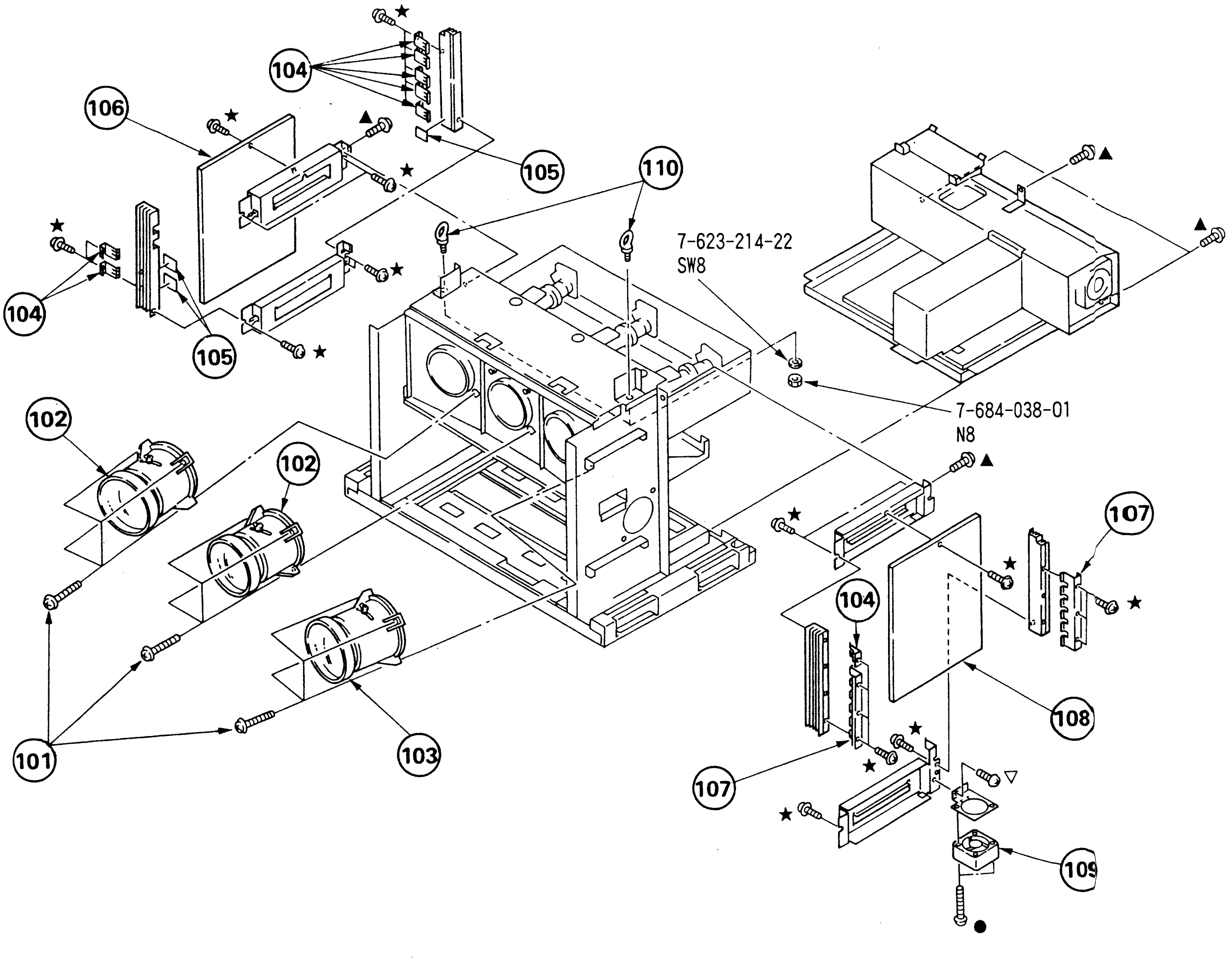
☆: 7-685-660-79 +BVTP4×10
▲: 7-682-562-04 +SCREW, TERMINAL (M4×10)
□: 7-685-663-79 +ITTP4×16
◎: 7-685-646-79 +BVTP3×8



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	*1-634-631-11	PB BOARD	53,54
52	4-374-303-01	RIVET, NYLON	
53	⚠1-439-466-12	TRANSFORMER ASSY, FLYBACK (NX-2500)	
54	⚠1-439-466-21	TRANSFORMER ASSY, FLYBACK (NX-2502)	
55	⚠1-574-973-11	LEAD ASSY, HIGH-VOLTAGE	
56	⚠1-559-865-31	LEAD ASSY, HIGH-VOLTAGE	
57	4-373-137-01	CAP (Z), RUBBER	
58	⚠1-453-108-31	DC BLOCK, HIGH-VOLTAGE	
59	*1-629-817-11	NB BOARD	
60	4-304-749-00	NUT, FLANGE	
61	⚠1-413-483-13	REGULATOR, SWITCHING(SOPS1008B)	
62	*A-1380-289-A	K BOARD, COMPLETE	
63	*A-1195-041-A	PA BOARD, COMPLETE	
64	*4-398-732-01	CUSHION	
65	4-396-205-01	PLATE, POWER	
66	4-362-811-00	BUTTON, MAIN POWER	

8-3. E BLOCK AND DC BLOCK

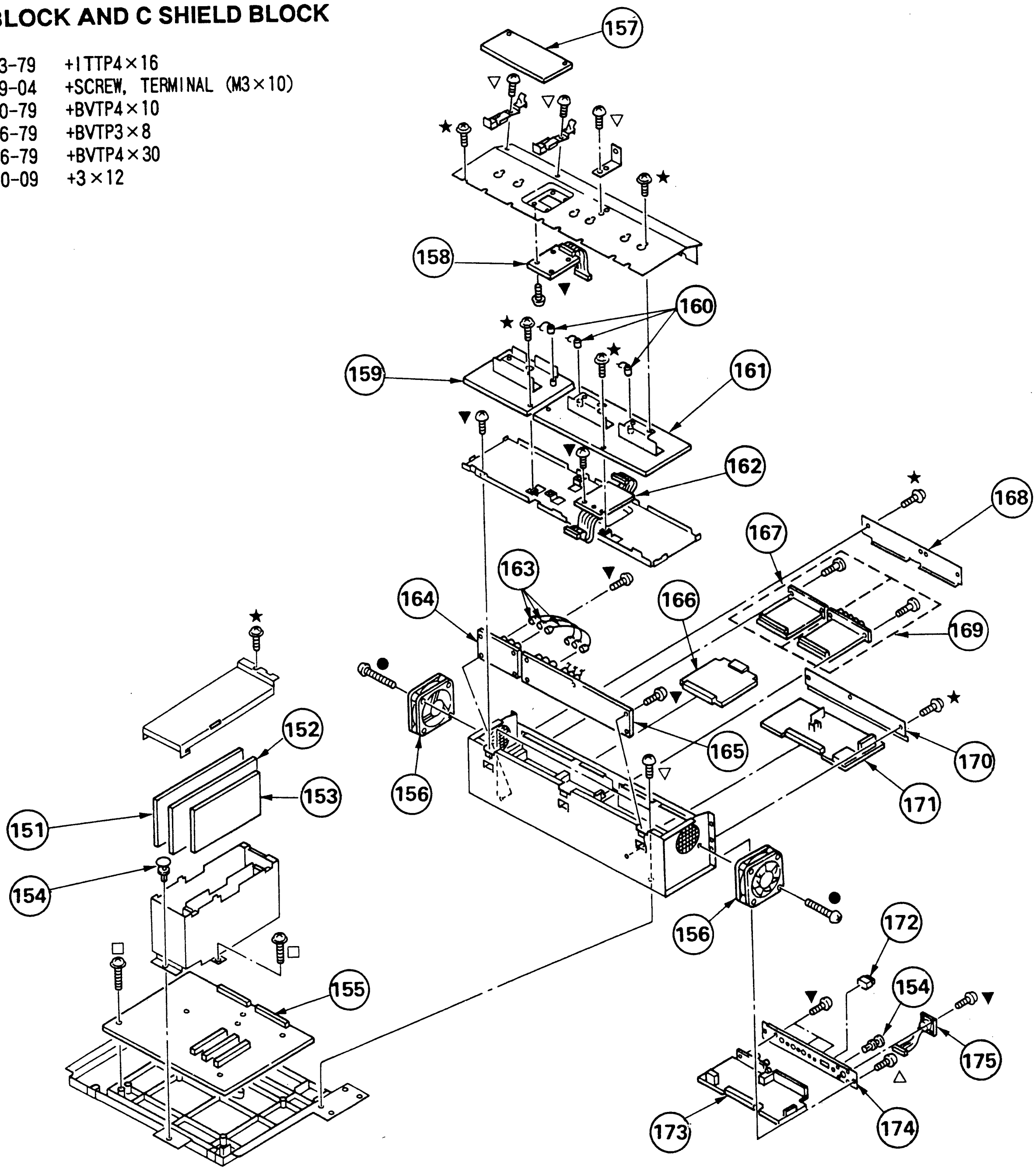
★: 7-682-549-04 +SCREW, TERMINAL (M3×10)
▲: 7-682-562-04 +SCREW, TERMINAL (M4×10)
▽: 7-685-660-79 +BVTP4×10
●: 7-685-666-79 +BVTP4×30


104
106
★
▲
105
110
7-623-214-22
SW8
▲
▲
104
105
102
102
7-684-038-01
N8
107
104
108
101
103
107
▽
109
●

REF.NO.	PART NO.	DESCRIPTION	REMARK
101	3-701-810-91	SCREW, TERMINAL	
102	4-389-503-02	LENS	
103	4-389-503-12	LENS	
104	*4-395-528-01	HOLDER (C), TR	
105	4-393-406-01	SHEET (R), RADIATION	
106	*A-1345-903-A	E BOARD, COMPLETE	
107	*4-395-553-01	HOLDER (A), TR	
108	*A-1345-961-A	DC BOARD, COMPLETE	
109	1-541-702-11	FAN, DC	
110	*4-396-262-01	EYEBOLT	

8-4. DM BLOCK AND C SHIELD BLOCK

□: 7-685-663-79 +ITTP4×16
★: 7-682-549-04 +SCREW, TERMINAL (M3×10)
▽: 7-685-660-79 +BVTP4×10
▼: 7-685-646-79 +BVTP3×8
●: 7-685-666-79 +BVTP4×30
△: 7-682-550-09 +3×12

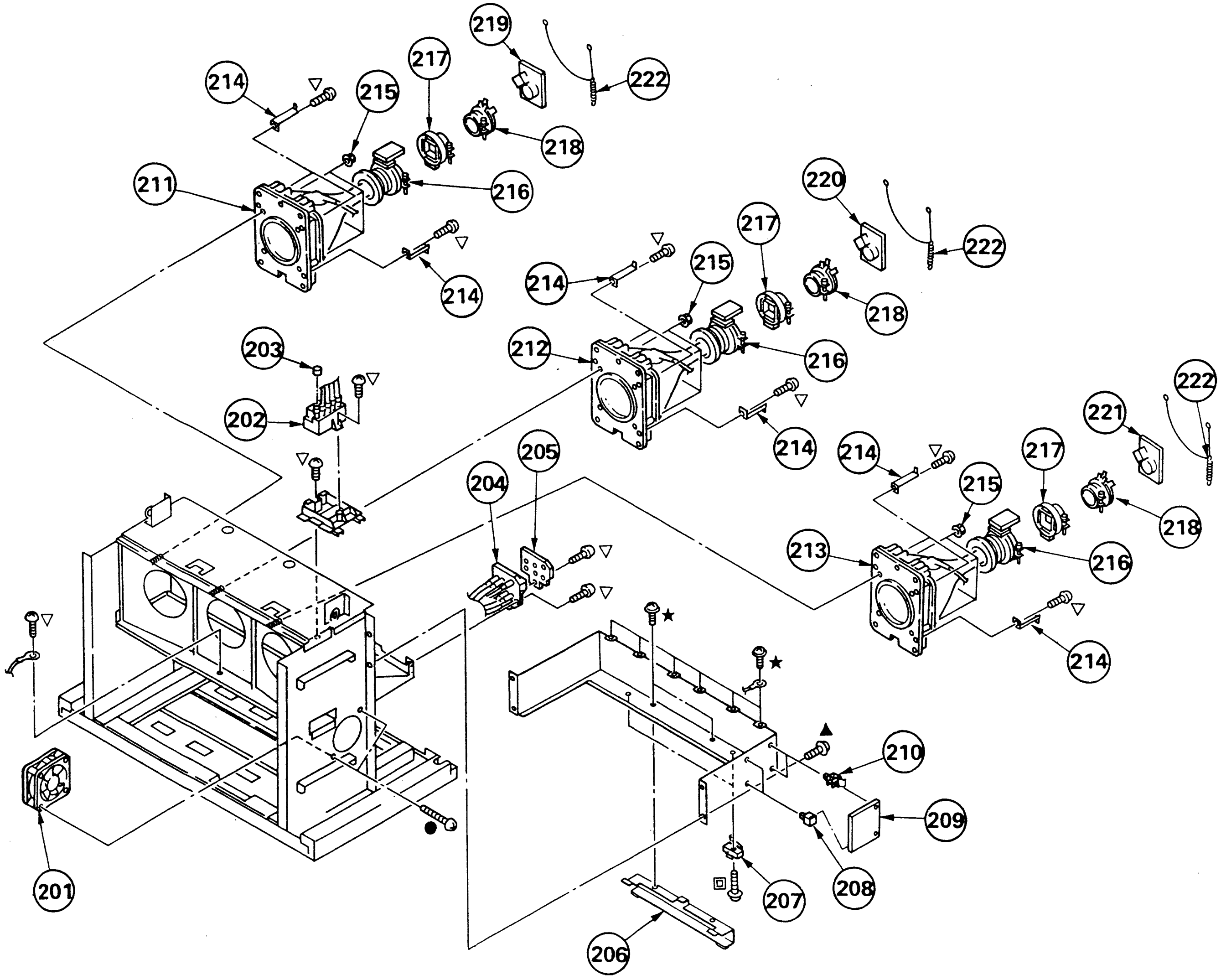


REF.NO.	PART NO.	DESCRIPTION	REMARK
151	*A-1345-901-A	DB BOARD, COMPLETE	
152	*A-1345-873-A	DA BOARD, COMPLETE	
153	*A-1394-300-A	Y BOARD, COMPLETE	
154	4-374-303-01	RIVET, NYLON	
155	*1-629-830-11	DM BOARD	
156	1-541-703-11	FAN, DC	
157	*A-1390-207-A	LA BOARD, COMPLETE	
158	*1-639-929-11	CFB BOARD	
159	*A-1335-018-A	CA (B) BOARD, COMPLETE	
160	*1-555-110-00	CABLE, P-P	
161	*A-1335-017-A	CA (RG) BOARD, COMPLETE	
162	*1-639-928-11	CFA BOARD	
163	*1-575-091-11	CABLE, P-P	
164	*1-639-927-11	QM BOARD	
165	*1-639-926-11	BM BOARD	
166	*A-1130-978-A	BC BOARD, COMPLETE	
167	*A-1394-301-A	Z BOARD, COMPLETE	
168	*4-395-558-01	PLATE (Z)	
169	1-466-236-11	INPUT UNIT, RGB	
170	*4-395-559-01	PLATE (B)	
171	*A-1135-692-A	BA BOARD, COMPLETE	
172	*3-673-948-11	CAP, DUST	
173	A-1135-710-A	BB BOARD, COMPLETE	
174	4-395-583-11	PANEL (B), CONNECTOR	
175	1-575-092-11	CONNECTOR ASSY, MULTI 14P	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

8-5. CRT BLOCK

●: 7-685-666-79 +BVTP4×30
▽: 7-685-660-79 +BVTP4×10
★: 7-682-549-04 +SCREW, TERMINAL (M3×10)
▲: 7-682-562-04 +SCREW, TERMINAL (M4×10)
▣: 7-682-551-04 +SCREW, TERMINAL (M3×14)


219
217
222
214
215
218
211
216
220
217
222
214
215
218
214
212
216
203
202
222
221
205
214
214
217
204
215
218
213
216
214
210
209
201
207
208
206

REF.NO.	PART NO.	DESCRIPTION	REMARK
201	1-541-703-11	FAN, DC	
202	⚠1-453-108-11	DC BLOCK, HIGH-VOLTAGE	
203	4-373-137-01	CAP (Z), RUBBER	
204	⚠1-238-755-11	RESISTOR ASSY, HIGH-VOLTAGE	
205	4-031-481-01	COVER, FOCUS PACK	
206	*4-035-837-01	COVER, CB	
207	1-571-900-11	SWITCH, MICRO	
208	*3-701-903-11	HOLDER, PC BOARD	
209	*1-640-416-11	LB BOARD	
210	*3-703-141-00	HOLDER, PCB	
211	⚠8-734-022-05	CRT (B)	
212	⚠8-734-021-05	CRT (G)	
213	⚠8-734-023-05	CRT (R)	
214	4-032-428-01	HOOK, GROUND	
215	4-304-749-00	NUT, FLANGE	
216	⚠1-451-355-11	DEFLECTION YOKE (Y636PJ)	
217	⚠1-452-361-91	NECK ASSY, CRT (NA365)	
218	⚠1-452-429-11	NECK ASSY, CRT (NA366)	
219	*A-1331-007-A	CB (B) BOARD, COMPLETE	
220	*A-1331-006-A	CB (G) BOARD, COMPLETE	
221	*A-1331-005-A	CB (R) BOARD, COMPLETE	
222	4-303-774-XX	SPRING	

BM **BC**

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- ✱ : Selected to yield optimum performance.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION				REMARK
	1-639-926-11	BM BOARD ********				
	*1-564-508-11	PLUG, CONNECTOR 5P				
	*1-564-509-11	PLUG, CONNECTOR 6P				
	*1-564-515-11	PLUG, CONNECTOR 12P				
	*1-568-979-11	CONNECTOR 30P				
	*1-568-981-11	CONNECTOR, MALE 64P				
	*1-568-982-11	CONNECTOR, FEMALE 96P				
	*1-568-984-11	CONNECTOR, MALE 96P				
	*1-568-985-11	CONNECTOR, FEMALE 64P				
		<JACK>				
J1	*1-526-575-00	SOCKET, PLUG 1P				
J2	*1-526-575-00	SOCKET, PLUG 1P				
J3	*1-526-575-00	SOCKET, PLUG 1P				
J4	*1-526-575-00	SOCKET, PLUG 1P				
J5	*1-526-575-00	SOCKET, PLUG 1P				
J6	*1-526-575-00	SOCKET, PLUG 1P				

****

REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1130-978-A	BC BOARD, COMPLETE ******************				
	*1-568-981-11	CONNECTOR, MALE 64P				
		<CAPACITOR>				
C101	1-101-004-00	CERAMIC	0.01MF		50V	
C102	1-101-004-00	CERAMIC	0.01MF		50V	
C103	1-101-004-00	CERAMIC	0.01MF		50V	
C104	1-101-004-00	CERAMIC	0.01MF		50V	
C105	1-124-927-11	ELECT	4.7MF	20%	50V	
C106	1-124-927-11	ELECT	4.7MF	20%	50V	
C107	1-124-927-11	ELECT	4.7MF	20%	50V	
C108	1-124-927-11	ELECT	4.7MF	20%	50V	
C109	1-126-101-11	ELECT	100MF	20%	16V	
C110	1-124-907-11	ELECT	10MF	20%	50V	
C111	1-101-004-00	CERAMIC	0.01MF		50V	
		<DIODE>				
D101	8-719-911-19	DIODE 1SS119				
D102	8-719-911-19	DIODE 1SS119				
D103	8-719-911-19	DIODE 1SS119				
D104	8-719-911-19	DIODE 1SS119				
D105	8-719-911-19	DIODE 1SS119				
D106	8-719-911-19	DIODE 1SS119				
D107	8-719-900-95	DIODE V09G				

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<IC>				
IC101	8-759-007-21	IC MC74HC4053N				
IC102	8-759-001-00	IC MC74HC132N				
IC103	8-759-001-00	IC MC74HC132N				
IC104	8-759-054-26	IC HD74HC123AP				
IC105	8-759-929-62	IC LM7812CT				
		<COIL>				
L101	1-459-155-00	COIL (WITH CORE) 45UH				
		<TRANSISTOR>				
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q104	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q105	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		<RESISTOR>				
R101	1-249-405-11	CARBON	100	5%	1/4W	
R102	1-249-405-11	CARBON	100	5%	1/4W	
R103	1-249-437-11	CARBON	47K	5%	1/4W	
R104	1-249-437-11	CARBON	47K	5%	1/4W	
R105	1-249-437-11	CARBON	47K	5%	1/4W	
R106	1-249-429-11	CARBON	10K	5%	1/4W	
R107	1-249-421-11	CARBON	2.2K	5%	1/4W	
R108	1-249-429-11	CARBON	10K	5%	1/4W	
R109	1-249-429-11	CARBON	10K	5%	1/4W	
R110	1-249-429-11	CARBON	10K	5%	1/4W	
R111	1-249-437-11	CARBON	47K	5%	1/4W	
R112	1-249-405-11	CARBON	100	5%	1/4W	
R113	1-249-424-11	CARBON	3.9K	5%	1/4W	
R114	1-249-405-11	CARBON	100	5%	1/4W	
R115	1-249-437-11	CARBON	47K	5%	1/4W	
R116	1-249-424-11	CARBON	3.9K	5%	1/4W	
R117	1-249-429-11	CARBON	10K	5%	1/4W	
R118	1-249-435-11	CARBON	33K	5%	1/4W	
R119	1-249-435-11	CARBON	33K	5%	1/4W	
R120	1-249-421-11	CARBON	2.2K	5%	1/4W	
R121	1-249-429-11	CARBON	10K	5%	1/4W	
R122	1-249-429-11	CARBON	10K	5%	1/4W	
		<RELAY>				
RY101	1-515-757-11	RELAY				
RY102	1-515-757-11	RELAY				
RY103	1-515-757-11	RELAY				

****

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1135-692-A	BA BOARD, COMPLETE ******************			
	*1-568-984-11	CONNECTOR, MALE 96P			
	1-570-859-11	SWITCH, SLIDE			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<MODULE>			
BPF1	1-236-366-11	MODULE, TRAP			
BPF2	1-236-365-11	MODULE, TRAP			
		<CAPACITOR>			
C1	1-124-910-11	ELECT	47MF	20%	50V
C2	1-124-910-11	ELECT	47MF	20%	50V
C3	1-124-910-11	ELECT	47MF	20%	50V
C7	1-124-907-11	ELECT	10MF	20%	50V
C8	1-124-122-11	ELECT	100MF	20%	50V
C9	1-124-122-11	ELECT	100MF	20%	50V
C10	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C11	1-124-907-11	ELECT	10MF	20%	50V
C12	1-124-910-11	ELECT	47MF	20%	50V
C13	1-124-910-11	ELECT	47MF	20%	50V
C14	1-124-910-11	ELECT	47MF	20%	50V
C15	1-124-910-11	ELECT	47MF	20%	50V
C16	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C17	1-124-910-11	ELECT	47MF	20%	50V
C18	1-124-910-11	ELECT	47MF	20%	50V
C19	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C23	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C24	1-124-910-11	ELECT	47MF	20%	50V
C25	1-124-910-11	ELECT	47MF	20%	50V
C26	1-124-910-11	ELECT	47MF	20%	50V
C27	1-124-910-11	ELECT	47MF	20%	50V
C28	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C29	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C30	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C31	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C32	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C33	1-124-907-11	ELECT	10MF	20%	50V
C34	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C35	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C36	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C37	1-124-903-11	ELECT	1MF	20%	50V
C39	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C40	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C41	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C42	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C43	1-124-907-11	ELECT	10MF	20%	50V
C44	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C45	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C46	1-124-119-00	ELECT	330MF	20%	16V
C47	1-124-119-00	ELECT	330MF	20%	16V
C48	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C49	1-136-153-00	FILM	0.01MF	5%	50V
C50	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C51	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C52	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C53	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C54	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C55	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C56	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C57	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C58	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C59	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C60	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C61	1-136-177-00	FILM	1MF	5%	50V
C62	1-136-177-00	FILM	1MF	5%	50V
C63	1-124-122-11	ELECT	100MF	20%	50V
C67	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C68	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C69	1-163-120-00	CERAMIC CHIP	130PF	5%	50V
C70	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C71	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C72	1-124-927-11	ELECT	4.7MF	20%	50V
C73	1-124-903-11	ELECT	1MF	20%	50V
C74	1-136-171-00	FILM	0.33MF	5%	50V
C75	1-130-479-00	MYLAR	0.0047MF	5%	50V
C76	1-163-157-00	FILM	0.022MF	5%	50V
C77	1-163-157-00	FILM	0.022MF	5%	50V
C78	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C79	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C82	1-136-177-00	FILM	1MF	5%	50V
C83	1-124-907-11	ELECT	10MF	20%	50V
C84	1-124-910-11	ELECT	47MF	20%	50V
C85	1-124-907-11	ELECT	10MF	20%	50V
C86	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C87	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C88	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C89	1-164-161-11	CERAMIC CHIP	0.0022MF		50V
C90	1-124-122-11	ELECT	100MF	20%	50V
C91	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C104	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C106	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C201	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C202	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C203	1-163-157-00	FILM	0.022MF	5%	50V
C205	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C207	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C208	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C211	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C212	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C213	1-124-122-11	ELECT	100MF	20%	50V
C214	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C215	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C216	1-124-122-11	ELECT	100MF	20%	50V
C217	1-124-122-11	ELECT	100MF	20%	50V
C218	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C219	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C220	1-124-122-11	ELECT	100MF	20%	50V
C221	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C222	1-124-122-11	ELECT	100MF	20%	50V
C223	1-124-122-11	ELECT	100MF	20%	50V
C224	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C229	1-124-907-11	ELECT	10MF	20%	50V
C230	1-124-122-11	ELECT	100MF	20%	50V
C231	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C234	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C235	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C236	1-124-907-11	ELECT	10MF	20%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C238	1-124-907-11	ELECT	10MF	20%	50V
C239	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C240	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C241	1-124-927-11	ELECT	4.7MF	20%	50V
C242	1-124-907-11	ELECT	10MF	20%	50V
C243	1-124-907-11	ELECT	10MF	20%	50V

BA

REF.NO.	PART NO.	DESCRIPTION			REMARK
C244	1-124-907-11	ELECT	10MF	20%	50V
C301	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C302	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C303	1-126-233-11	ELECT	22MF	20%	50V
C304	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C305	1-126-233-11	ELECT	22MF	20%	50V
C306	1-124-910-11	ELECT	47MF	20%	50V
C307	1-136-169-00	FILM	0.22MF	5%	50V
C308	1-124-902-00	ELECT	0.47MF	20%	50V
C309	1-124-902-00	ELECT	0.47MF	20%	50V
C310	1-124-902-00	ELECT	0.47MF	20%	50V
C311	1-126-233-11	ELECT	22MF	20%	50V
C312	1-124-910-11	ELECT	47MF	20%	50V
C313	1-124-910-11	ELECT	47MF	20%	50V
C314	1-124-910-11	ELECT	47MF	20%	50V
C315	1-124-910-11	ELECT	47MF	20%	50V
C316	1-124-902-00	ELECT	0.47MF	20%	50V
C317	1-126-101-11	ELECT	100MF	20%	16V
C318	1-124-910-11	ELECT	47MF	20%	50V
C319	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C320	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C321	1-124-907-11	ELECT	10MF	20%	50V
C322	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C323	1-124-907-11	ELECT	10MF	20%	50V
C324	1-124-902-00	ELECT	0.47MF	20%	50V
C325	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C326	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C327	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C328	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C329	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C330	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C331	1-136-177-00	FILM	1MF	5%	50V
C332	1-136-169-00	FILM	0.22MF	5%	50V
C333	1-124-907-11	ELECT	10MF	20%	50V
C334	1-124-910-11	ELECT	47MF	20%	50V
C335	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C336	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C337	1-163-089-00	CERAMIC CHIP	6PF	0.25PF	50V
C338	1-124-907-11	ELECT	10MF	20%	50V
C339	1-124-903-11	ELECT	1MF	20%	50V
C340	1-124-903-11	ELECT	1MF	20%	50V
C341	1-124-907-11	ELECT	10MF	20%	50V
C342	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C343	1-124-910-11	ELECT	47MF	20%	50V
C344	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C346	1-124-907-11	ELECT	10MF	20%	50V
C347	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C350	1-163-117-00	CERAMIC CHIP	100PF	5%	50V

<TRIMMER>

CT101	1-141-181-11	CAP, TRIMMER
CT102	1-141-181-11	CAP, TRIMMER

<DIODE>

D1	8-719-400-18	DIODE MA152WK
D2	8-719-400-18	DIODE MA152WK
D3	8-719-400-18	DIODE MA152WK
D4	8-719-400-18	DIODE MA152WK
D5	8-719-400-18	DIODE MA152WK
D6	8-719-104-34	DIODE 1S2836
D7	8-719-400-18	DIODE MA152WK
D8	8-719-400-18	DIODE MA152WK

REF.NO.	PART NO.	DESCRIPTION		REMARK
D9	8-719-400-18	DIODE MA152WK		
D10	8-719-400-18	DIODE MA152WK		
D11	8-719-800-76	DIODE 1SS226		
D12	8-719-400-18	DIODE MA152WK		
D13	8-719-400-18	DIODE MA152WK		
D14	8-719-400-18	DIODE MA152WK		
D101	8-719-105-46	DIODE RD3.3M-B2		
D102	8-719-105-82	DIODE RD5.1M-B2		
D103	8-719-400-18	DIODE MA152WK		
D107	8-719-400-18	DIODE MA152WK		
D108	8-719-900-95	DIODE V09G		
D109	8-719-900-95	DIODE V09G		
D110	8-719-105-XX	DIODE RD6.2M-B1		
D112	8-719-400-18	DIODE MA152WK		
D113	8-719-400-18	DIODE MA152WK		
D117	8-719-400-18	DIODE MA152WK		
D118	8-719-104-34	DIODE 1S2836		
D119	8-719-400-18	DIODE MA152WK		
D130	8-719-400-18	DIODE MA152WK		
D132	8-719-104-34	DIODE 1S2836		
D201	8-719-400-18	DIODE MA152WK		
D301	8-719-400-18	DIODE MA152WK		
D303	8-719-400-18	DIODE MA152WK		
D304	8-719-105-63	DIODE RD4.3M-B1		

<DELAY LINE>

DL101	1-415-122-31	DELAY LINE, 1H (PAL)
DL102	1-415-336-00	DELAY LINE, Y
DL103	1-415-494-11	DELAY LINE, Y
DL104	1-415-494-11	DELAY LINE, Y

<FILTER>

FL1	1-236-164-11	ENCAPSULATED COMPONENT
FL2	1-236-620-11	FILTER, LOW PASS
FL3	1-236-620-11	FILTER, LOW PASS
FL4	1-236-620-11	FILTER, LOW PASS

<IC>

IC1	8-759-300-71	IC HD14053BFP
IC2	8-759-513-47	IC TDA4555/V1
IC3	8-759-932-16	IC TDA4565
IC5	8-759-710-42	IC NJM2228M
IC6	8-759-208-94	IC CX-894
IC7	8-759-300-71	IC HD14053BFP
IC8	8-752-034-85	IC CXA1216P
IC9	8-759-100-96	IC UPC4558G2
IC10	8-741-692-01	IC SBX1692-01
IC11	8-759-979-16	IC CX-7916
IC12	1-808-891-11	MODULE SNY-9202
IC13	8-759-100-96	IC UPC4558G2
IC14	8-759-929-84	IC SN74LS12NS
IC15	1-809-576-11	MODULE, H8B7178B
IC16	8-759-929-62	IC LM7812CT
IC17	8-759-504-46	IC PQ05RF1
IC19	8-759-926-06	IC SN74HC126ANS

<COIL>

L101	1-410-470-11	INDUCTOR	10UH
L102	1-410-209-51	INDUCTOR CHIP	27UH
L103	1-410-466-41	INDUCTOR	4.7UH

REF.NO.	PART NO.	DESCRIPTION	REMARK
L104	1-408-406-00	INDUCTOR 5.6UH	
L105	1-404-539-11	COIL	
L106	1-404-554-11	COIL	
L107	1-404-554-11	COIL	
L108	1-404-554-11	COIL	
L109	1-408-397-00	INDUCTOR 1UH	
L110	1-410-466-41	INDUCTOR 4.7UH	
L111	1-410-466-41	INDUCTOR 4.7UH	
L112	1-410-466-41	INDUCTOR 4.7UH	
L114	1-459-155-00	COIL (WITH CORE) 45UH	
L115	1-459-155-00	COIL (WITH CORE) 45UH	
L116	1-410-466-41	INDUCTOR 4.7UH	
L120	1-404-584-11	COIL	
L136	1-408-777-00	INDUCTOR CHIP 10UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q2	8-729-901-01	TRANSISTOR DTC144EK	
Q3	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q7	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8	8-729-901-01	TRANSISTOR DTC144EK	
Q9	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q10	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q11	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q12	8-729-216-22	TRANSISTOR 2SA1162-G	
Q13	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q14	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q15	8-729-901-01	TRANSISTOR DTC144EK	
Q16	8-729-901-01	TRANSISTOR DTC144EK	
Q17	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q18	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q19	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q20	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q21	8-729-901-01	TRANSISTOR DTC144EK	
Q22	8-729-901-01	TRANSISTOR DTC144EK	
Q23	8-729-901-01	TRANSISTOR DTC144EK	
Q24	8-729-901-01	TRANSISTOR DTC144EK	
Q25	8-729-901-01	TRANSISTOR DTC144EK	
Q26	8-729-901-01	TRANSISTOR DTC144EK	
Q27	8-729-901-01	TRANSISTOR DTC144EK	
Q28	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q29	8-729-216-22	TRANSISTOR 2SA1162-G	
Q30	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q31	8-729-216-22	TRANSISTOR 2SA1162-G	
Q32	8-729-216-22	TRANSISTOR 2SA1162-G	
Q33	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q34	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q35	8-729-901-01	TRANSISTOR DTC144EK	
Q36	8-729-216-22	TRANSISTOR 2SA1162-G	
Q37	8-729-901-01	TRANSISTOR DTC144EK	
Q38	8-729-901-01	TRANSISTOR DTC144EK	
Q39	8-729-116-06	TRANSISTOR 2SK160-K6	
Q40	8-729-116-06	TRANSISTOR 2SK160-K6	
Q41	8-729-901-01	TRANSISTOR DTC144EK	
Q43	8-729-901-01	TRANSISTOR DTC144EK	
Q45	8-729-901-01	TRANSISTOR DTC144EK	
Q48	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q49	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q50	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q51	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q52	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q118	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q119	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q120	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q152	8-729-901-01	TRANSISTOR DTC144EK	
Q201	8-729-901-01	TRANSISTOR DTC144EK	
Q202	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q203	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q204	8-729-901-01	TRANSISTOR DTC144EK	
Q205	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q206	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q207	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q208	8-729-901-01	TRANSISTOR DTC144EK	
Q209	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q210	8-729-216-22	TRANSISTOR 2SA1162-G	
Q212	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q213	8-729-216-22	TRANSISTOR 2SA1162-G	
Q301	8-729-140-96	TRANSISTOR 2SD774-34	
Q302	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q303	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q304	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q305	8-729-901-01	TRANSISTOR DTC144EK	
Q306	8-729-901-01	TRANSISTOR DTC144EK	
Q307	8-729-901-01	TRANSISTOR DTC144EK	
Q308	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q310	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q311	8-729-901-01	TRANSISTOR DTC144EK	
Q312	8-729-901-01	TRANSISTOR DTC144EK	
Q313	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q314	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q315	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q316	8-729-901-01	TRANSISTOR DTC144EK	
Q317	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q318	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q319	8-729-901-01	TRANSISTOR DTC144EK	
Q320	8-729-901-01	TRANSISTOR DTC144EK	
Q321	8-729-901-01	TRANSISTOR DTC144EK	
Q323	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q324	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q325	8-729-901-01	TRANSISTOR DTC144EK	
Q326	8-729-901-01	TRANSISTOR DTC144EK	
Q327	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q329	8-729-116-06	TRANSISTOR 2SK160-K6	
Q330	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q336	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q337	8-729-216-22	TRANSISTOR 2SA1162-G	
Q338	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q340	8-729-901-01	TRANSISTOR DTC144EK	
Q350	8-729-901-01	TRANSISTOR DTC144EK	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1	1-216-001-00	METAL GLAZE 10 5%	1/10W
R2	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R3	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R4	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R6	1-216-001-00	METAL GLAZE 10 5%	1/10W
R7	1-216-683-11	METAL CHIP 22K 0.50%	1/10W
R8	1-216-001-00	METAL GLAZE 10 5%	1/10W
R11	1-216-643-11	METAL CHIP 470 0.50%	1/10W
R12	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R13	1-216-691-11	METAL CHIP 47K 0.50%	1/10W
R14	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R15	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R16	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R17	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R18	1-216-691-11	METAL CHIP 47K 0.50%	1/10W

BA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R19	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R20	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R21	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R22	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R23	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R24	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R25	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R26	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R27	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R29	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R30	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R31	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R32	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R33	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R34	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R38	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R39	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R40	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R41	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R42	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R43	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R44	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R45	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R46	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R47	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R48	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R49	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R50	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R51	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R52	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R53	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R54	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R55	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R56	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R57	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R58	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R59	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R60	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R61	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R63	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R64	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R65	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R66	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R67	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R68	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R69	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R70	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R71	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R72	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R73	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R74	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R75	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R76	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R77	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R78	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R80	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R81	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R82	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R83	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R84	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R85	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R86	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R87	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R88	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R89	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R90	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R91	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R92	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R93	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R94	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R95	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R103	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R105	1-216-066-00	METAL GLAZE	5.1K	5%	1/10W	
R106	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R107	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R108	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R118	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R119	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R120	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R123	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R124	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R125	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R126	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R127	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R128	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R129	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R130	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R131	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R132	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R133	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R134	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R135	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R141	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R142	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R143	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R145	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R146	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R148	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R149	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R150	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R201	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R202	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R203	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R205	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R206	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R207	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R209	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R210	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R211	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R212	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R213	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R214	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R215	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R216	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R217	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R218	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R219	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R220	1-216-045-00	METAL GLAZE	680	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R221	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R222	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R223	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R224	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R225	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R226	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R227	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R228	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R229	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R230	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R231	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R232	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R233	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R234	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R235	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R236	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R237	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R238	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R239	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R240	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R241	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R242	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R244	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R290	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R302	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R303	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R304	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R305	1-216-005-00	METAL GLAZE	15	5%	1/10W	
R306	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R307	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R308	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R309	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R310	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R311	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R312	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R313	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R314	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R315	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R316	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R317	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R318	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R319	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R320	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R321	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R322	1-216-689-11	METAL CHIP	39K	0.50%	1/10W	
R323	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R324	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R325	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R326	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R327	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R328	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R329	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R330	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R331	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R332	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R333	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R334	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R335	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R336	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R337	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R338	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R339	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R340	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R341	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R342	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R343	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R344	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R345	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R346	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R347	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R348	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R349	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R350	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R351	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R352	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R353	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R354	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R355	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R356	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R357	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R358	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R359	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R360	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R361	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R362	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R363	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R364	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R365	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R366	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R367	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R368	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R369	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R370	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R371	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R372	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R373	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R374	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R375	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R376	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R377	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R378	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R379	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R380	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R381	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R382	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R383	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R384	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R385	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R386	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R387	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R388	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R389	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R390	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R391	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R392	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R393	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R394	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R395	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R396	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R397	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R398	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R399	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R410	1-215-425-00	METAL	1.5K	1%	1/4W	
R411	1-215-425-00	METAL	1.5K	1%	1/4W	
R412	1-215-425-00	METAL	1.5K	1%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV101	1-230-504-11	RES, ADJ, CARBON 220	
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV103	1-226-775-11	RES, ADJ, METAL GLAZE 100K	
RV104	1-226-775-11	RES, ADJ, METAL GLAZE 100K	
RV105	1-228-993-00	RES, ADJ, CARBON 4.7K	

<THERMISTER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
TH101	1-800-071-XX	THERMISTER	

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
X101	1-567-413-11	VIBRATOR, CRYSTAL	
X102	1-527-789-00	VINRATOR, CRYSTAL	

****

A-1135-710-A BB BOARD, COMPLETE
****

PART NO.	DESCRIPTION
*1-564-595-11	PLUG, CONNECTOR 14P
*1-568-984-11	CONNECTOR, MALE 96P
4-382-854-11	SCREW (M3X10), P, SW (+)

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C402	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C404	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C405	1-126-101-11	ELECT	100MF	20%	16V
C406	1-124-120-11	ELECT	220MF	20%	16V
C407	1-126-101-11	ELECT	100MF	20%	16V
C408	1-124-907-11	ELECT	10MF	20%	50V
C409	1-126-101-11	ELECT	100MF	20%	16V
C412	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C413	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C414	1-124-907-11	ELECT	10MF	20%	50V
C415	1-126-101-11	ELECT	100MF	20%	16V
C416	1-126-101-11	ELECT	100MF	20%	16V
C417	1-124-120-11	ELECT	220MF	20%	16V
C418	1-126-101-11	ELECT	100MF	20%	16V
C419	1-126-101-11	ELECT	100MF	20%	16V
C425	1-126-101-11	ELECT	100MF	20%	16V
C450	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C451	1-126-103-11	ELECT	470MF	20%	16V
C453	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C501	1-124-907-11	ELECT	10MF	20%	50V
C502	1-124-907-11	ELECT	10MF	20%	50V
C503	1-124-477-11	ELECT	47MF	20%	16V
C504	1-124-477-11	ELECT	47MF	20%	16V
C505	1-124-927-11	ELECT	4.7MF	20%	50V
C506	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C507	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C508	1-124-477-11	ELECT	47MF	20%	16V
C509	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C510	1-124-477-11	ELECT	47MF	20%	16V
C511	1-126-103-11	ELECT	470MF	20%	16V
C512	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C513	1-124-477-11	ELECT	47MF	20%	16V
C514	1-124-927-11	ELECT	4.7MF	20%	50V
C515	1-124-927-11	ELECT	4.7MF	20%	50V
C516	1-124-927-11	ELECT	4.7MF	20%	50V
C518	1-124-907-11	ELECT	10MF	20%	50V
C519	1-124-907-11	ELECT	10MF	20%	50V
C520	1-124-903-11	ELECT	1MF	20%	50V
C521	1-124-907-11	ELECT	10MF	20%	50V
C522	1-124-907-11	ELECT	10MF	20%	50V
C523	1-163-833-00	CERAMIC CHIP	0.068MF		25V
C524	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C525	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C526	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C527	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C528	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C529	1-126-233-11	ELECT	22MF	20%	50V
C650	1-124-657-00	ELECT	10MF	20%	50V
C651	1-136-169-00	FILM	0.22MF	5%	50V
C652	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C653	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C654	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C655	1-124-910-11	ELECT	47MF	20%	50V
C657	1-126-103-11	ELECT	470MF	20%	16V
C658	1-124-122-11	ELECT	100MF	20%	50V
C660	1-124-907-11	ELECT	10MF	20%	50V
C692	1-124-122-11	ELECT	100MF	20%	50V
C693	1-124-122-11	ELECT	100MF	20%	50V
C694	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C695	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C696	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C697	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C700	1-124-657-00	ELECT	10MF	20%	50V
C701	1-136-169-00	FILM	0.22MF	5%	50V
C702	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C703	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C707	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C708	1-124-910-11	ELECT	47MF	20%	50V
C710	1-124-122-11	ELECT	100MF	20%	50V
C711	1-126-103-11	ELECT	470MF	20%	16V
C713	1-124-907-11	ELECT	10MF	20%	50V
C750	1-124-657-00	ELECT	10MF	20%	50V
C751	1-136-169-00	FILM	0.22MF	5%	50V
C752	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C753	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C754	1-126-101-11	ELECT	100MF	20%	16V
C755	1-126-101-11	ELECT	100MF	20%	16V
C756	1-126-101-11	ELECT	100MF	20%	16V
C757	1-124-910-11	ELECT	47MF	20%	50V
C759	1-124-122-11	ELECT	100MF	20%	50V
C760	1-126-103-11	ELECT	470MF	20%	16V
C762	1-126-233-11	ELECT	22MF	20%	50V
C763	1-124-907-11	ELECT	10MF	20%	50V
C914	1-126-101-11	ELECT	100MF	20%	16V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D401	8-719-900-95	DIODE V09G	
D402	8-719-900-95	DIODE V09G	
D450	8-719-400-18	DIODE MA152WK	
D451	8-719-400-18	DIODE MA152WK	
D452	8-719-105-28	DIODE RD2.4M-B	
D501	8-719-400-18	DIODE MA152WK	
D502	8-719-400-18	DIODE MA152WK	
D503	8-719-400-18	DIODE MA152WK	
D504	8-719-105-82	DIODE RD5.1M-B2	
D506	8-719-105-82	DIODE RD5.1M-B2	
D507	8-719-105-82	DIODE RD5.1M-B2	
D508	8-719-105-82	DIODE RD5.1M-B2	
D509	8-719-105-82	DIODE RD5.1M-B2	
D510	8-719-105-82	DIODE RD5.1M-B2	

REF.NO.	PART NO.	DESCRIPTION	REMARK
D511	8-719-105-82	DIODE RD5.1M-B2	
D512	8-719-105-82	DIODE RD5.1M-B2	
D513	8-719-105-82	DIODE RD5.1M-B2	
D514	8-719-105-82	DIODE RD5.1M-B2	
D515	8-719-105-82	DIODE RD5.1M-B2	
D516	8-719-106-80	DIODE RD13M-B2	
D518	8-719-106-80	DIODE RD13M-B2	
D520	8-719-105-82	DIODE RD5.1M-B2	
D521	8-719-105-82	DIODE RD5.1M-B2	
D522	8-719-106-80	DIODE RD13M-B2	
D523	8-719-106-80	DIODE RD13M-B2	
D524	8-719-105-82	DIODE RD5.1M-B2	
D525	8-719-105-28	DIODE RD2.4M-B	
D526	8-719-400-18	DIODE MA152WK	
D527	8-719-105-82	DIODE RD5.1M-B2	
D528	8-719-400-18	DIODE MA152WK	
D529	8-719-105-46	DIODE RD3.3M-B2	
D530	8-719-400-18	DIODE MA152WK	
D634	8-719-400-18	DIODE MA152WK	
D652	8-719-400-18	DIODE MA152WK	
D653	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC401	8-759-800-81	IC LA7016	
IC402	8-759-929-62	IC LM7812CT	
IC403	8-759-929-65	IC LM7912CT	
IC404	8-759-300-71	IC HD14053BFP	
IC405	8-759-926-18	IC SN74HC157ANS	
IC407	8-759-926-18	IC SN74HC157ANS	
IC408	8-759-300-71	IC HD14053BFP	
IC409	8-759-300-71	IC HD14053BFP	
IC410	8-759-100-96	IC UPC4558G2	
IC411	8-759-100-96	IC UPC4558G2	
IC412	8-759-145-27	IC UPC1406HA	
IC413	8-749-922-84	IC BX-6474	
IC414	8-749-922-83	IC BX-6473	
IC415	8-749-922-83	IC BX-6473	
IC416	8-749-922-83	IC BX-6473	
IC417	8-749-922-86	IC BX-7913	
IC418	8-749-922-85	IC BX-6475	
IC419	8-749-922-85	IC BX-6475	
IC420	8-749-922-85	IC BX-6475	
IC422	8-759-100-93	IC UPC393G2	
IC423	8-759-925-85	IC SN74HC32ANS	
IC424	8-759-100-93	IC UPC393G2	

<JACK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
J101	1-566-980-21	CONNECTOR, ROUND TYPE 4P	
J102	1-537-257-21	TERMINAL BOARD, INPUT/OUTPUT	
J103	1-537-403-11	TERMINAL BOARD, INPUT/OUTPUT	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L401	1-459-155-00	COIL (WITH CORE) 45UH	
L402	1-459-155-00	COIL (WITH CORE) 45UH	
L403	1-459-155-00	COIL (WITH CORE) 45UH	
L404	1-459-155-00	COIL (WITH CORE) 45UH	
L405	1-410-671-31	INDUCTOR 47UH	
L605	1-410-482-31	INDUCTOR 100UH	
L651	1-410-482-31	INDUCTOR 100UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q401	8-729-140-96	TRANSISTOR 2SD774-34	
Q402	8-729-140-97	TRANSISTOR 2SB734-34	
Q403	8-729-901-01	TRANSISTOR DTC144EK	
Q404	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q405	8-729-901-01	TRANSISTOR DTC144EK	
Q450	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q451	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q452	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q453	8-729-901-01	TRANSISTOR DTC144EK	
Q454	8-729-901-01	TRANSISTOR DTC144EK	
Q456	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q457	8-729-216-22	TRANSISTOR 2SA1162-G	
Q501	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q502	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q504	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q506	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q507	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q508	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q509	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q510	8-729-901-01	TRANSISTOR DTC144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-01	TRANSISTOR DTC144EK	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-901-01	TRANSISTOR DTC144EK	
Q515	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q516	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q517	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q518	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q519	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q520	8-729-901-01	TRANSISTOR DTC144EK	
Q521	8-729-901-01	TRANSISTOR DTC144EK	
Q522	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q523	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q524	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q525	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q526	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q527	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q528	8-729-901-01	TRANSISTOR DTC144EK	
Q529	8-729-901-01	TRANSISTOR DTC144EK	
Q530	8-729-901-01	TRANSISTOR DTC144EK	
Q531	8-729-901-01	TRANSISTOR DTC144EK	
Q532	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q533	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q534	8-729-320-62	TRANSISTOR 2SD789-34	
Q535	8-729-901-01	TRANSISTOR DTC144EK	
Q536	8-729-901-01	TRANSISTOR DTC144EK	
Q537	8-729-901-01	TRANSISTOR DTC144EK	
Q538	8-729-901-01	TRANSISTOR DTC144EK	
Q539	8-729-901-01	TRANSISTOR DTC144EK	
Q540	8-729-901-01	TRANSISTOR DTC144EK	
Q541	8-729-901-01	TRANSISTOR DTC144EK	
Q542	8-729-901-01	TRANSISTOR DTC144EK	
Q543	8-729-901-01	TRANSISTOR DTC144EK	
Q544	8-729-901-01	TRANSISTOR DTC144EK	
Q545	8-729-216-22	TRANSISTOR 2SA1162-G	
Q546	8-729-901-01	TRANSISTOR DTC144EK	
Q547	8-729-216-22	TRANSISTOR 2SA1162-G	
Q548	8-729-901-01	TRANSISTOR DTC144EK	
Q549	8-729-901-01	TRANSISTOR DTC144EK	
Q550	8-729-901-01	TRANSISTOR DTC144EK	
Q551	8-729-901-01	TRANSISTOR DTC144EK	

BB

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q552	8-729-901-01	TRANSISTOR DTC144EK	
Q553	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q650	8-729-116-05	TRANSISTOR 2SK160-K5	
Q651	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q652	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q653	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q654	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q656	8-729-901-01	TRANSISTOR DTC144EK	
Q700	8-729-116-05	TRANSISTOR 2SK160-K5	
Q701	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q702	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q703	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q704	8-729-923-06	TRANSISTOR FMW-8	
Q705	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q706	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q707	8-729-923-06	TRANSISTOR FMW-8	
Q708	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q709	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q710	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q741	8-729-901-01	TRANSISTOR DTC144EK	
Q750	8-729-116-05	TRANSISTOR 2SK160-K5	
Q751	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q752	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q753	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q754	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q755	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q756	8-729-901-01	TRANSISTOR DTC144EK	
Q757	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q800	8-729-119-78	TRANSISTOR 2SC2785-HFE	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R401	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R403	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R404	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R405	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R450	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R451	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R452	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R453	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R454	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R455	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R456	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R459	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R460	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R461	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R462	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R463	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R464	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R466	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R467	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R468	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R469	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R470	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R471	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R472	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R473	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R474	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R501	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R502	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R503	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R504	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R505	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R506	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R507	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R508	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R509	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R510	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R511	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R512	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R513	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R514	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R516	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R518	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R519	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R520	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R521	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R522	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R523	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R524	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R525	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R526	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R527	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R528	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R529	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R530	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R531	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R532	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R533	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R534	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R535	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R536	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R537	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R538	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R539	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R540	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R541	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R542	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R543	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R544	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R545	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R546	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R547	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R548	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R549	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R550	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R551	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R552	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R553	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R554	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R555	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R556	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R557	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R558	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R559	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R560	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R561	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R562	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R563	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R564	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R565	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R566	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R567	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R568	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R569	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R570	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R571	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R572	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R573	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R574	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R575	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R576	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R577	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R578	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R579	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R580	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R581	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R582	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R583	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R584	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R585	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R586	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R587	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R588	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R589	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R590	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R591	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R592	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R593	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R594	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R595	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R596	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R597	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R598	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R599	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R600	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R601	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R602	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R603	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R604	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R605	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R606	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R607	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R608	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R609	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R610	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R611	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R612	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R613	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R614	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R615	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R616	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R617	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R618	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R619	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R620	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R621	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R622	1-216-448-11	METAL OXIDE	39	5%	2W	F
R623	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R624	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R625	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R626	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R627	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R628	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R629	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R630	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R631	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R632	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R633	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R634	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R635	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R636	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R637	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R638	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R639	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R640	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R641	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R642	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R643	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R650	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R651	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R652	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R653	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R654	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R655	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R656	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R657	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R658	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R659	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R660	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R661	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R663	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R664	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R665	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R686	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R688	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R700	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R701	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R702	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R703	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R704	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R705	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R706	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R707	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R708	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R709	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R710	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R711	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R712	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R713	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R714	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R715	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R716	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R717	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R718	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R719	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R720	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R721	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R722	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R723	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R724	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R725	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R727	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R728	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R729	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R750	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R751	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R752	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R753	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R755	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R756	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R757	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R758	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R759	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	

RVP-400QM

BB PB PA

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R760	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R761	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R762	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R763	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R764	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R765	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R766	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R768	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R769	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R770	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R791	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R836	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R837	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R900	1-249-417-11	CARBON	1K	5%	1/4W	

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RL401	1-515-757-11	RELAY
RL402	1-515-757-11	RELAY
RL403	1-515-757-11	RELAY

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
SW101	1-570-859-11	SWITCH, SLIDE

`***************************************************************`

REF.NO.	PART NO.	DESCRIPTION
	*1-634-631-11	PB BOARD ********
	*1-564-506-11	PLUG, CONNECTOR 3P
	*4-341-752-01	EYELET

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C501	1-136-103-00	FILM	0.1MF	5%	200V
C502	1-136-103-00	FILM	0.1MF	5%	200V

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
FBT1	⚠1-439-466-12	TRANSFORMER ASSY, FLYBACK (NX-2500)
FBT2	⚠1-439-466-21	TRANSFORMER ASSY, FLYBACK (NX-2502)

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION
NL501	1-519-108-XX	LAMP, NEON
NL502	1-519-108-XX	LAMP, NEON

`***************************************************************`

REF.NO.	PART NO.	DESCRIPTION
	*A-1195-041-A	PA BOARD, COMPLETE ******************
	1-506-348-XX	PIN, CONNECOTR 5P
	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P
	*1-564-518-11	PLUG, CONNECTOR 3P
	*1-564-520-11	PLUG, CONNECTOR 5P
	*1-564-521-11	PLUG, CONNECTOR 6P
	*1-564-523-11	PLUG, CONNECTOR 8P
	*1-564-526-11	PLUG, CONNECTOR 11P
	*1-564-528-11	PLUG, CONNECTOR 13P
	*4-341-751-01	EYELET
	4-382-854-11	SCREW (M3X10), P, SW (+)
	*4-391-515-11	SHEET (A), INSULATOR

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C1	1-124-903-11	ELECT	1MF	20%	50V
C2	1-124-903-11	ELECT	1MF	20%	50V
C3	1-124-927-11	ELECT	4.7MF	20%	50V
C4	1-124-927-11	ELECT	4.7MF	20%	50V
C5	1-124-927-11	ELECT	4.7MF	20%	50V
C6	1-124-927-11	ELECT	4.7MF	20%	50V
C7	1-124-907-11	ELECT	10MF	20%	50V
C8	1-136-153-00	FILM	0.01MF	5%	50V
C9	1-124-034-51	ELECT	33MF	20%	16V
C10	1-124-925-11	ELECT	2.2MF	20%	50V
C11	1-136-165-00	FILM	0.1MF	5%	50V
C12	1-124-907-11	ELECT	10MF	20%	50V
C13	1-136-169-00	FILM	0.22MF	5%	50V
C14	1-124-907-11	ELECT	10MF	20%	50V
C15	1-124-119-00	ELECT	330MF	20%	16V
C16	1-102-824-00	CERAMIC	470PF	5%	50V
C17	1-136-165-00	FILM	0.1MF	5%	50V
C18	1-136-165-00	FILM	0.1MF	5%	50V
C19	1-136-165-00	FILM	0.1MF	5%	50V
C20	1-136-165-00	FILM	0.1MF	5%	50V
C21	1-126-101-11	ELECT	100MF	20%	16V
C22	1-136-169-00	FILM	0.22MF	5%	50V
C23	1-130-475-00	MYLAR	0.0022MF	5%	50V
C24	1-130-475-00	MYLAR	0.0022MF	5%	50V
C25	1-102-973-00	CERAMIC	100PF	5%	50V
C26	1-124-907-11	ELECT	10MF	20%	50V
C27	1-124-925-11	ELECT	2.2MF	20%	50V
C28	1-136-159-00	FILM	0.033MF	5%	50V
C29	1-124-927-11	ELECT	4.7MF	20%	50V
C30	1-101-004-00	CERAMIC	0.01MF		50V
C31	1-101-004-00	CERAMIC	0.01MF		50V
C32	1-102-973-00	CERAMIC	100PF	5%	50V
C33	1-102-973-00	CERAMIC	100PF	5%	50V
C34	1-102-973-00	CERAMIC	100PF	5%	50V
C35	1-101-884-00	CERAMIC	56PF	5%	50V
C36	1-136-165-00	FILM	0.1MF	5%	50V
C37	1-102-030-00	CERAMIC	330PF	10%	500V
C38	1-124-903-11	ELECT	1MF	20%	50V
C39	1-124-903-11	ELECT	1MF	20%	50V
C40	1-108-700-11	MYLAR	0.047MF	10%	200V
C41	1-108-704-11	MYLAR	0.1MF	10%	200V
C42	1-124-903-11	ELECT	1MF	20%	50V
C43	1-102-973-00	CERAMIC	100PF	5%	50V
C44	1-162-117-00	CERAMIC	100PF	10%	500V
C45	1-124-907-11	ELECT	10MF	20%	50V
C46	1-126-101-11	ELECT	100MF	20%	16V
C47	1-124-927-11	ELECT	4.7MF	20%	50V
C51	⚠1-136-948-11	FILM	24000MF	3%	1.6KV
C52	1-123-024-21	ELECT	33MF		160V
C53	1-136-134-00	FILM	1.5MF	5%	400V
C54	⚠1-136-134-11	FILM	1.5MF	5%	400V
C55	1-126-233-11	ELECT	22MF	20%	50V
C56	1-124-925-11	ELECT	2.2MF	20%	50V
C58	1-124-477-11	ELECT	47MF	20%	16V
C59	1-136-165-00	FILM	0.1MF	5%	50V
C60	1-136-153-00	FILM	0.01MF	5%	50V
C61	1-136-153-00	FILM	0.01MF	5%	50V
C62	1-136-165-00	FILM	0.1MF	5%	50V
C63	1-136-165-00	FILM	0.1MF	5%	50V
C64	1-136-153-00	FILM	0.01MF	5%	50V
C65	1-136-103-00	FILM	0.1MF	5%	200V
C67	1-136-153-00	FILM	0.01MF	5%	50V
C68	1-136-153-00	FILM	0.01MF	5%	50V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- The components identified by ☒ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D3	8-719-911-19	DIODE 1SS119	
D4	8-719-911-19	DIODE 1SS119	
D5	8-719-109-85	DIODE RD5.1ESB2	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-911-19	DIODE 1SS119	
D8	8-719-911-19	DIODE 1SS119	
D9	8-719-911-19	DIODE 1SS119	
D10	8-719-109-85	DIODE RD5.1ESB2	
D11	8-719-911-19	DIODE 1SS119	
D12	8-719-109-85	DIODE RD5.1ESB2	
D13	8-719-911-19	DIODE 1SS119	
D14	8-719-110-17	DIODE RD10ESB2	
D16	8-719-911-19	DIODE 1SS119	
D18	8-719-911-19	DIODE 1SS119	
D20	8-719-945-81	DIODE ERC06-15SA	
D21	8-719-945-81	DIODE ERC06-15SA	
D22	8-719-300-80	DIODE RU-1C	
D23	8-719-900-26	DIODE ERD29-08J	
D24	8-719-911-19	DIODE 1SS119	
D25	8-719-911-19	DIODE 1SS119	
D28	8-719-911-19	DIODE 1SS119	
D29	8-719-911-19	DIODE 1SS119	
D31	8-719-911-19	DIODE 1SS119	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-990-82	IC TL082CP	
IC2	8-759-103-93	IC UPC393C	
IC3	8-759-103-93	IC UPC393C	
IC4	8-759-103-93	IC UPC393C	
IC5	8-759-604-39	IC M5F78M12L	
IC6	8-759-100-75	IC UPC1394C	
IC7	8-759-240-40	IC TC4040BP	
IC8	8-759-045-72	IC MC14572UBCP	
IC9	8-759-908-15	IC TL431CLP	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-459-614-11	COIL, CHOKE 90UH	
L2	1-459-863-11	COIL, CHOKE 2.1MMH	
L3	⚠ 1-459-863-11	COIL, CHOKE 2.1MMH	
L4	⚠ 1-459-863-11	COIL, CHOKE 2.1MMH	
L5	1-459-155-00	COIL (WITH CORE) 45UH	
L6	1-459-155-00	COIL (WITH CORE) 45UH	

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
NL1	1-519-108-XX	LAMP, NEON	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q5	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q6	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q7	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q10	8-729-805-07	TRANSISTOR 2SD1887-CA	
Q11	8-729-201-62	TRANSISTOR 2SC2555-2	
Q12	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q13	8-729-904-34	TRANSISTOR DTA114TS	
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q15	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q18	8-729-804-48	TRANSISTOR 2SC3675	
Q20	8-729-119-76	TRANSISTOR 2SA1175-HFE	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
☒R1	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
R2	1-249-433-11	CARBON	22K	5%	1/4W	
R3	1-249-439-11	CARBON	68K	5%	1/4W	
☒R4	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
R5	1-249-433-11	CARBON	22K	5%	1/4W	
R6	1-249-439-11	CARBON	68K	5%	1/4W	
R7	1-249-433-11	CARBON	22K	5%	1/4W	
R8	1-249-433-11	CARBON	22K	5%	1/4W	
R9	1-249-423-11	CARBON	3.3K	5%	1/4W	
R10	1-249-429-11	CARBON	10K	5%	1/4W	
R11	1-249-435-11	CARBON	33K	5%	1/4W	
R12	1-249-429-11	CARBON	10K	5%	1/4W	
R13	1-249-429-11	CARBON	10K	5%	1/4W	
R14	1-215-453-00	METAL	22K	1%	1/4W	
R15	1-215-453-00	METAL	22K	1%	1/4W	
R16	1-249-433-11	CARBON	22K	5%	1/4W	
R17	1-249-429-11	CARBON	10K	5%	1/4W	
R18	1-249-429-11	CARBON	10K	5%	1/4W	
R19	1-249-429-11	CARBON	10K	5%	1/4W	
R20	1-249-433-11	CARBON	22K	5%	1/4W	
R21	1-249-441-11	CARBON	100K	5%	1/4W	
R22	1-215-463-00	METAL	56K	1%	1/4W	
R23	1-215-455-00	METAL	27K	1%	1/4W	
R24	1-249-429-11	CARBON	10K	5%	1/4W	
R25	1-249-435-11	CARBON	33K	5%	1/4W	
R26	1-249-417-11	CARBON	1K	5%	1/4W	
R28	1-215-423-00	METAL	1.2K	1%	1/4W	
☒R29	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
☒R30	⚠	METAL			1/4W	
R31	1-249-429-11	CARBON	10K	5%	1/4W	
R32	1-215-473-00	METAL	150K	1%	1/4W	
☒R33	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
☒R34	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
R35	1-249-417-11	CARBON	1K	5%	1/4W	
R36	1-249-423-11	CARBON	3.3K	5%	1/4W	
R37	1-215-469-00	METAL	100K	1%	1/4W	
R38	1-215-453-00	METAL	22K	1%	1/4W	
R39	1-215-455-00	METAL	27K	1%	1/4W	
R40	1-249-417-11	CARBON	1K	5%	1/4W	
☒R41	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
☒R42	⚠ [illegible]	METAL	[illegible]	[illegible]	1/4W	
R43	1-215-461-00	METAL	47K	1%	1/4W	
R44	1-215-432-00	METAL	3K	1%	1/4W	
R45	1-215-432-00	METAL	3K	1%	1/4W	
R46	1-215-432-00	METAL	3K	1%	1/4W	
R47	1-215-432-00	METAL	3K	1%	1/4W	
R48	1-215-469-00	METAL	100K	1%	1/4W	
R49	1-215-469-00	METAL	100K	1%	1/4W	
R50	1-215-469-00	METAL	100K	1%	1/4W	
R53	1-249-419-11	CARBON	1.5K	5%	1/4W	
R55	1-215-429-00	METAL	2.2K	1%	1/4W	
R56	1-215-445-00	METAL	10K	1%	1/4W	

PA **QM** **NB** **CBR**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R57	1-249-441-11	CARBON	100K	5%	1/4W	
R58	1-249-441-11	CARBON	100K	5%	1/4W	
R59	1-249-413-11	CARBON	470	5%	1/4W	
R60	1-249-437-11	CARBON	47K	5%	1/4W	
R61	1-215-443-00	METAL	8.2K	1%	1/4W	
R62	1-215-455-00	METAL	27K	1%	1/4W	
R63	1-249-431-11	CARBON	15K	5%	1/4W	
R64	1-249-417-11	CARBON	1K	5%	1/4W	
R65	1-249-435-11	CARBON	33K	5%	1/4W	
R66	1-249-441-11	CARBON	100K	5%	1/4W	
R67	1-247-903-00	CARBON	1M	5%	1/4W	
R68	1-249-417-11	CARBON	1K	5%	1/4W	
R69	1-249-423-11	CARBON	3.3K	5%	1/4W	
R70	1-249-429-11	CARBON	10K	5%	1/4W	
R71	1-249-417-11	CARBON	1K	5%	1/4W	
R72	1-249-423-11	CARBON	3.3K	5%	1/4W	
R73	1-249-423-11	CARBON	3.3K	5%	1/4W	
R74	1-249-417-11	CARBON	1K	5%	1/4W	
R75	1-249-417-11	CARBON	1K	5%	1/4W	
R76	1-249-417-11	CARBON	1K	5%	1/4W	
R77	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R78	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R79	1-249-425-11	CARBON	4.7K	5%	1/4W	
R80	1-249-423-11	CARBON	3.3K	5%	1/4W	
R81	1-247-725-11	CARBON	10K	5%	1/4W	F
R82	1-249-441-11	CARBON	100K	5%	1/4W	
R86	1-249-460-11	CARBON	15K	5%	1/4W	F
R87	1-249-421-11	CARBON	2.2K	5%	1/4W	
R88	1-249-441-11	CARBON	100K	5%	1/4W	
R89	1-216-378-11	METAL OXIDE	5.6	5%	2W	F
R90	1-249-417-11	CARBON	1K	5%	1/4W	
R91	1-249-417-11	CARBON	1K	5%	1/4W	
R92	1-247-903-00	CARBON	1M	5%	1/4W	
R93	1-249-439-11	CARBON	68K	5%	1/4W	
R95	1-215-461-00	METAL	47K	1%	1/4W	
R96	1-249-437-11	CARBON	47K	5%	1/4W	
R97	1-249-433-11	CARBON	22K	5%	1/4W	
R99	1-249-425-11	CARBON	4.7K	5%	1/4W	
R101	1-249-405-11	CARBON	100	5%	1/4W	
R102	1-249-441-11	CARBON	100K	5%	1/4W	
R103	1-249-417-11	CARBON	1K	5%	1/4W	
R104	1-249-441-11	CARBON	100K	5%	1/4W	
R105	1-249-429-11	CARBON	10K	5%	1/4W	
R106	1-249-425-11	CARBON	4.7K	5%	1/4W	
R107	1-249-433-11	CARBON	22K	5%	1/4W	
R108	1-249-441-11	CARBON	100K	5%	1/4W	
R109	1-249-437-11	CARBON	47K	5%	1/4W	
R110	1-249-441-11	CARBON	100K	5%	1/4W	
R111	1-249-437-11	CARBON	47K	5%	1/4W	
R112	1-247-715-11	CARBON	1.5K	5%	1/4W	F
R113	1-249-405-11	CARBON	100	5%	1/4W	
R114	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R116	1-214-782-00	METAL	160K	1%	1/4W	
R117	1-247-725-11	CARBON	10K	5%	1/4W	F
R118	1-202-730-00	SOLID	8.2M	10%	1/2W	
R119	1-215-432-00	METAL	3K	1%	1/4W	
R120	1-215-432-00	METAL	3K	1%	1/4W	
R121	1-215-475-00	METAL	180K	1%	1/4W	
R122	1-215-475-00	METAL	180K	1%	1/4W	
R123	1-249-429-11	CARBON	10K	5%	1/4W	
R124	1-249-425-11	CARBON	4.7K	5%	1/4W	
R125	1-249-429-11	CARBON	10K	5%	1/4W	
R126	1-249-417-11	CARBON	1K	5%	1/4W	
R127	1-249-405-11	CARBON	100	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R128	1-249-405-11	CARBON	100	5%	1/4W	
R129	1-249-429-11	CARBON	10K	5%	1/4W	
R130	1-215-920-11	METAL OXIDE	3.3K	5%	3W	F

<TRANSFORMER>

T1	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE
T2	1-437-131-00	TRANSFORMER, DRIVE

<CRYSTAL>

X1	1-578-768-11	VIBLATOR, CERAMIC

****

1-639-927-11 QM BOARD
****

	*1-564-508-11	PLUG, CONNECTOR 5P
	*1-564-509-11	PLUG, CONNECTOR 6P
	*1-564-515-11	PLUG, CONNECTOR 12P
	*1-568-985-11	CONNECTOR, FEMALE 64P

<JACK>

J7	*1-526-575-00	SOCKET, PLUG 1P
J8	*1-526-575-00	SOCKET, PLUG 1P
J9	*1-526-575-00	SOCKET, PLUG 1P

****

*1-629-817-11 NB BOARD
****

	*1-564-507-11	PLUG, CONNECTOR 4P

<CAPACITOR>

C701	1-124-477-11	ELECT	47MF	20%	16V

<IC>

IC701	8-741-139-80	IC BX-1398

****

*A-1331-005-A **CBR BOARD, COMPLETE**
****

	*1-506-371-00	PIN, CONNECTOR 2P
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
	⚠1-526-812-12	SOCKET, CRT
	1-564-507-11	PLUG, CONNECTOR 4P
	1-575-098-11	LEAD ASSY, SIELD HIGH VOLTAGE
	*1-629-826-11	PC BOARD, CBR

<CAPACITOR>

C301	1-162-114-00	CERAMIC	0.0047MF	2KV

<COIL>

L303	1-408-401-00	INDUCTOR	2.2UH

<NEON LAMP>

The components identified by shading and mark △ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
NL301	1-519-423-11	LAMP, NEON	
NL302	1-519-423-11	LAMP, NEON	
NL303	1-519-368-21	LAMP, NEON	
NL304	1-519-368-21	LAMP, NEON	
NL305	1-519-423-11	LAMP, NEON	

<RESISTOR>

R301	1-202-818-00	SOLID	1K	10%	1/2W	
R302	1-202-818-00	SOLID	1K	10%	1/2W	
R303	1-202-823-11	SOLID	2.7K	10%	1/2W	
R306	1-202-838-00	SOLID	100K	10%	1/2W	
R307	1-202-535-00	SOLID	27	10%	1/2W	
R308	1-202-525-00	SOLID	10	10%	1/2W	
R309	1-202-832-00	SOLID	15K	10%	1/2W	

<SPARK GAP>

SG301	1-519-063-XX	DISCHARGING GAP	

****

***A-1331-006-A CBG BOARD, COMPLETE**

****

	*1-506-371-00	PIN, CONNECTOR 2P	
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P	
	△1-526-812-12	SOCKET, CRT	
	1-564-507-11	PLUG, CONNECTOR 4P	
	1-575-097-11	LEAD ASSY, SIELD HIGH VOLTAGE	
	*1-629-827-11	PC BOARD, CBG	

<CAPACITOR>

C401	1-162-114-00	CERAMIC	0.0047MF	2KV

<COIL>

L403	1-408-401-00	INDUCTOR	2.2UH

<NEON LAMP>

NL401	1-519-423-11	LAMP, NEON
NL402	1-519-423-11	LAMP, NEON
NL403	1-519-368-21	LAMP, NEON
NL404	1-519-368-21	LAMP, NEON
NL405	1-519-423-11	LAMP, NEON

<RESISTOR>

R401	1-202-818-00	SOLID	1K	10%	1/2W
R402	1-202-818-00	SOLID	1K	10%	1/2W
R403	1-202-823-11	SOLID	2.7K	10%	1/2W
R406	1-202-838-00	SOLID	100K	10%	1/2W
R407	1-202-535-00	SOLID	27	10%	1/2W
R408	1-202-525-00	SOLID	10	10%	1/2W
R409	1-202-832-00	SOLID	15K	10%	1/2W

<SPARK GAP>

SG401	1-519-063-XX	DISCHARGING GAP

****

***A-1331-007-A CBB BOARD, COMPLETE**

****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-506-371-00	PIN, CONNECTOR 2P	
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P	
	△1-526-812-12	SOCKET, CRT	
	1-564-507-11	PLUG, CONNECTOR 4P	
	1-575-096-11	LEAD ASSY, SIELD HIGH VOLTAGE	
	*1-629-828-11	PC BOARD, CBB	

<CAPACITOR>

C501	1-162-114-00	CERAMIC	0.0047MF	2KV

<COIL>

L503	1-408-401-00	INDUCTOR	2.2UH

<NEON LAMP>

NL501	1-519-423-11	LAMP, NEON
NL502	1-519-423-11	LAMP, NEON
NL503	1-519-368-21	LAMP, NEON
NL504	1-519-368-21	LAMP, NEON
NL505	1-519-423-11	LAMP, NEON

<RESISTOR>

R501	1-202-818-00	SOLID	1K	10%	1/2W
R502	1-202-818-00	SOLID	1K	10%	1/2W
R503	1-202-823-11	SOLID	2.7K	10%	1/2W
R506	1-202-838-00	SOLID	100K	10%	1/2W
R507	1-202-535-00	SOLID	27	10%	1/2W
R508	1-202-525-00	SOLID	10	10%	1/2W
R509	1-202-832-00	SOLID	15K	10%	1/2W

<SPARK GAP>

SG501	1-519-063-XX	DISCHARGING GAP

****

1-639-929-11 CFB BOARD

****

	*1-564-505-11	PLUG, CONNECTOR 2P
	*1-564-507-11	PLUG, CONNECTOR 4P
	*1-564-514-11	PLUG, CONNECTOR 11P
	*1-564-519-11	PLUG, CONNECTOR 4P
	*1-564-528-11	PLUG, CONNECTOR 13P

<CAPACITOR>

C201	1-101-821-00	CERAMIC	0.0022MF	500V
C202	1-101-821-00	CERAMIC	0.0022MF	500V
C203	1-101-821-00	CERAMIC	0.0022MF	500V
C204	1-101-821-00	CERAMIC	0.0022MF	500V
C205	1-101-821-00	CERAMIC	0.0022MF	500V

<FILTER>

FL201	1-236-071-11	ENCAPSULATED COMPONENT
FL202	1-236-164-11	ENCAPSULATED COMPONENT
FL203	1-236-071-11	ENCAPSULATED COMPONENT
FL204	1-236-071-11	ENCAPSULATED COMPONENT
FL205	1-236-071-11	ENCAPSULATED COMPONENT
FL206	1-236-071-11	ENCAPSULATED COMPONENT
FL207	1-236-164-11	ENCAPSULATED COMPONENT

CFB **CFA** **CA(RG)**

REF.NO.	PART NO.	DESCRIPTION	REMARK
FL208	1-236-164-11	ENCAPSULATED COMPONENT	
FL209	1-236-164-11	ENCAPSULATED COMPONENT	
FL210	1-236-164-11	ENCAPSULATED COMPONENT	

****

1-639-928-11 CFA BOARD
****

*1-575-136-11 CONNECTOR ASSY, FLAT CABLE

<FILTER>

REF.NO.	PART NO.	DESCRIPTION
FL1	1-236-164-11	ENCAPSULATED COMPONENT
FL2	1-236-164-11	ENCAPSULATED COMPONENT
FL3	1-236-164-11	ENCAPSULATED COMPONENT
FL4	1-236-101-11	ENCAPSULATED COMPONENT
FL5	1-236-164-11	ENCAPSULATED COMPONENT
FL6	1-236-101-11	ENCAPSULATED COMPONENT
FL7	1-236-164-11	ENCAPSULATED COMPONENT
FL8	1-236-101-11	ENCAPSULATED COMPONENT
FL9	1-236-164-11	ENCAPSULATED COMPONENT
FL10	1-236-164-11	ENCAPSULATED COMPONENT
FL11	1-236-164-11	ENCAPSULATED COMPONENT
FL12	1-236-164-11	ENCAPSULATED COMPONENT
FL13	1-236-164-11	ENCAPSULATED COMPONENT
FL14	1-236-164-11	ENCAPSULATED COMPONENT
FL15	1-236-164-11	ENCAPSULATED COMPONENT
FL16	1-236-164-11	ENCAPSULATED COMPONENT
FL17	1-236-164-11	ENCAPSULATED COMPONENT
FL18	1-236-164-11	ENCAPSULATED COMPONENT
FL19	1-236-164-11	ENCAPSULATED COMPONENT
FL20	1-236-164-11	ENCAPSULATED COMPONENT
FL21	1-236-164-11	ENCAPSULATED COMPONENT
FL22	1-236-101-11	ENCAPSULATED COMPONENT
FL23	1-236-101-11	ENCAPSULATED COMPONENT
FL24	1-236-164-11	ENCAPSULATED COMPONENT

****

*A-1335-017-A CA (RG) BOARD, COMPLETE
****

PART NO.	DESCRIPTION
*1-526-575-00	SOCKET, PLUG 1P
1-564-507-11	PLUG, CONNECTOR 4P
*1-564-514-11	PLUG, CONNECTOR 11P
*1-564-515-11	PLUG, CONNECTOR 12P
*1-564-516-11	PLUG, CONNECTOR 13P
*1-568-979-11	CONNECTOR 30P
*4-363-404-00	HOLDER, IC
4-391-519-01	SHEET (E), INSULATOR

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C1	1-124-907-11	ELECT	10MF	20%	50V
C2	1-126-101-11	ELECT	100MF	20%	16V
C3	1-124-907-11	ELECT	10MF	20%	50V
C4	1-126-101-11	ELECT	100MF	20%	16V
C5	1-126-233-11	ELECT	22MF	20%	50V
C6	1-126-101-11	ELECT	100MF	20%	16V
C7	1-126-233-11	ELECT	22MF	20%	50V
C8	1-102-820-00	CERAMIC	330PF	5%	50V
C9	1-101-880-00	CERAMIC	47PF	5%	50V
C10	1-101-004-00	CERAMIC	0.01MF		50V
C11	1-101-004-00	CERAMIC	0.01MF		50V
C12	1-101-004-00	CERAMIC	0.01MF		50V
C13	1-101-004-00	CERAMIC	0.01MF		50V
C14	1-126-233-11	ELECT	22MF	20%	50V
C15	1-102-963-00	CERAMIC	33PF	5%	50V
C16	1-126-233-11	ELECT	22MF	20%	50V
C17	1-136-165-00	FILM	0.1MF	5%	50V
C18	1-136-165-00	FILM	0.1MF	5%	50V
C19	1-136-165-00	FILM	0.1MF	5%	50V
C20	1-136-165-00	FILM	0.1MF	5%	50V
C21	1-126-233-11	ELECT	22MF	20%	50V
C22	1-126-103-11	ELECT	470MF	20%	16V
C23	1-136-171-00	FILM	0.33MF	5%	50V
C101	1-124-282-00	ELECT	22MF	20%	16V
C102	1-124-477-11	ELECT	47MF	20%	16V
C103	1-126-101-11	ELECT	100MF	20%	16V
C104	1-126-101-11	ELECT	100MF	20%	16V
C105	1-126-233-11	ELECT	22MF	20%	50V
C106	1-102-973-00	CERAMIC	100PF	5%	50V
C107	1-102-976-00	CERAMIC	180PF	5%	50V
C108	1-124-799-11	ELECT	2.2MF	20%	160V
C109	1-124-799-11	ELECT	2.2MF	20%	160V
C110	1-124-634-11	ELECT	1MF	20%	250V
C111	1-126-233-11	ELECT	22MF	20%	50V
C112	1-136-165-00	FILM	0.1MF	5%	50V
C113	1-136-165-00	FILM	0.1MF	5%	50V
C114	1-126-174-51	ELECT	10MF	20%	350V
C115	1-102-038-00	CERAMIC	0.001MF		500V
C116	1-102-050-00	CERAMIC	0.01MF	99%	500V
C117	1-124-768-11	ELECT	4.7MF	20%	50V
C118	1-101-004-00	CERAMIC	0.01MF		50V
C119	1-136-165-00	FILM	0.1MF	5%	50V
C120	1-124-903-11	ELECT	1MF	20%	50V
C121	1-126-233-11	ELECT	22MF	20%	50V
C122	1-126-233-11	ELECT	22MF	20%	50V
C123	1-126-233-11	ELECT	22MF	20%	50V
C127	1-101-004-00	CERAMIC	0.01MF		50V
C201	1-124-282-00	ELECT	22MF	20%	16V
C202	1-126-233-11	ELECT	22MF	20%	50V
C203	1-126-101-11	ELECT	100MF	20%	16V
C204	1-126-101-11	ELECT	100MF	20%	16V
C205	1-126-233-11	ELECT	22MF	20%	50V
C206	1-102-973-00	CERAMIC	100PF	5%	50V
C207	1-102-976-00	CERAMIC	180PF	5%	50V
C208	1-124-799-11	ELECT	2.2MF	20%	160V
C209	1-124-799-11	ELECT	2.2MF	20%	160V
C210	1-124-634-11	ELECT	1MF	20%	250V
C211	1-126-233-11	ELECT	22MF	20%	50V
C212	1-136-165-00	FILM	0.1MF	5%	50V
C213	1-136-165-00	FILM	0.1MF	5%	50V
C214	1-126-174-51	ELECT	10MF	20%	350V
C215	1-102-038-00	CERAMIC	0.001MF		500V
C216	1-102-050-00	CERAMIC	0.01MF	99%	500V
C217	1-124-768-11	ELECT	4.7MF	20%	50V
C218	1-101-004-00	CERAMIC	0.01MF		50V
C219	1-136-165-00	FILM	0.1MF	5%	50V
C220	1-124-903-11	ELECT	1MF	20%	50V
C221	1-126-233-11	ELECT	22MF	20%	50V
C222	1-126-233-11	ELECT	22MF	20%	50V
C223	1-126-233-11	ELECT	22MF	20%	50V
C227	1-101-004-00	CERAMIC	0.01MF		50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1	8-719-900-95	DIODE V09G
D2	8-719-900-95	DIODE V09G

REF.NO.	PART NO.	DESCRIPTION	REMARK
D3	8-719-109-89	DIODE RD5.6ESB2	
D4	8-719-911-19	DIODE 1SS119	
D5	8-719-911-19	DIODE 1SS119	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-911-19	DIODE 1SS119	
D8	8-719-911-19	DIODE 1SS119	
D9	8-719-109-93	DIODE RD6.2ESB2	
D11	8-719-948-45	DIODE ERA22-08	
D12	8-719-911-19	DIODE 1SS119	
D13	8-719-109-85	DIODE RD5.1ES-B2	
D101	8-719-901-83	DIODE 1SS83	
D103	8-719-109-51	DIODE RD2.0ESB2	
D104	8-719-911-19	DIODE 1SS119	
D105	8-719-901-83	DIODE 1SS83	
D106	8-719-911-19	DIODE 1SS119	
D107	8-719-911-19	DIODE 1SS119	
D109	8-719-911-19	DIODE 1SS119	
D110	8-719-109-51	DIODE RD2.0ESB2	
D111	8-719-911-19	DIODE 1SS119	
D112	8-719-911-19	DIODE 1SS119	
D113	8-719-911-19	DIODE 1SS119	
D114	8-719-110-36	DIODE RD13ESB2	
D115	8-719-911-19	DIODE 1SS119	
D201	8-719-901-83	DIODE 1SS83	
D203	8-719-109-51	DIODE RD2.0ESB2	
D204	8-719-911-19	DIODE 1SS119	
D205	8-719-901-83	DIODE 1SS83	
D206	8-719-911-19	DIODE 1SS119	
D207	8-719-911-19	DIODE 1SS119	
D209	8-719-911-19	DIODE 1SS119	
D210	8-719-109-51	DIODE RD2.0ESB2	
D211	8-719-911-19	DIODE 1SS119	
D212	8-719-911-19	DIODE 1SS119	
D213	8-719-911-19	DIODE 1SS119	
D214	8-719-110-36	DIODE RD13ESB2	
		<IC>	
IC1	8-759-929-65	IC LM7912CT	
IC2	8-759-982-13	IC RC7812FA	
IC3	8-759-982-21	IC RC78L05A	
IC4	8-759-038-14	IC MC74HC4538AN	
IC5	8-759-984-55	IC MB675429	
IC6	8-759-916-71	IC SN74HC244AN	
IC7	8-759-916-12	IC SN74HC00AN	
IC8	8-759-503-91	IC TL082ACP	
IC101	8-749-922-43	IC VPH05A	
IC102	8-759-503-91	IC TL082ACP	
IC103	8-749-920-88	IC SNY-8C02	
IC104	8-749-923-15	IC TY885002A	
IC201	8-749-922-43	IC VPH05A	
IC202	8-759-503-91	IC TL082ACP	
IC203	8-749-920-88	IC SNY-8C02	
IC204	8-749-923-15	IC TY885002A	
		<COIL>	
L101	1-408-880-00	INDUCTOR 0.68UH	
L201	1-408-880-00	INDUCTOR 0.68UH	
		<TRANSISTOR>	
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-900-36	TRANSISTOR DTC124ES	
Q3	8-729-900-36	TRANSISTOR DTC124ES	
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q5	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q9	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q10	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q11	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q12	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q13	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q15	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q18	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q19	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-140-50	TRANSISTOR 2SC3209LK	
Q103	8-729-801-88	TRANSISTOR 2SA1381-E	
Q104	8-729-801-88	TRANSISTOR 2SA1381-E	
Q105	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q106	8-729-140-50	TRANSISTOR 2SC3209LK	
Q107	8-729-801-88	TRANSISTOR 2SA1381-E	
Q108	8-729-900-63	TRANSISTOR DTA124ES	
Q109	8-729-900-63	TRANSISTOR DTA124ES	
Q110	8-729-900-36	TRANSISTOR DTC124ES	
Q111	8-729-105-74	TRANSISTOR 2SK523-M1	
Q112	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q113	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q202	8-729-140-50	TRANSISTOR 2SC3209LK	
Q203	8-729-801-88	TRANSISTOR 2SA1381-E	
Q204	8-729-801-88	TRANSISTOR 2SA1381-E	
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q206	8-729-140-50	TRANSISTOR 2SC3209LK	
Q207	8-729-801-88	TRANSISTOR 2SA1381-E	
Q208	8-729-900-63	TRANSISTOR DTA124ES	
Q209	8-729-900-63	TRANSISTOR DTA124ES	
Q210	8-729-900-36	TRANSISTOR DTC124ES	
Q211	8-729-105-74	TRANSISTOR 2SK523-M1	
Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<RESISTOR>	
R1	1-249-405-11	CARBON 100 5% 1/4W	
R2	1-215-437-00	METAL 4.7K 1% 1/4W	
R3	1-249-441-11	CARBON 100K 5% 1/4W	
R4	1-215-449-00	METAL 15K 1% 1/4W	
R5	1-249-405-11	CARBON 100 5% 1/4W	
R6	1-249-438-11	CARBON 56K 5% 1/4W	
R7	1-249-437-11	CARBON 47K 5% 1/4W	
R8	1-249-405-11	CARBON 100 5% 1/4W	
R9	1-215-449-00	METAL 15K 1% 1/4W	
R10	1-215-447-00	METAL 12K 1% 1/4W	
R11	1-249-405-11	CARBON 100 5% 1/4W	
R12	1-249-405-11	CARBON 100 5% 1/4W	
R13	1-249-441-11	CARBON 100K 5% 1/4W	
R14	1-249-423-11	CARBON 3.3K 5% 1/4W	
R15	1-249-397-11	CARBON 22 5% 1/4W	F
R16	1-249-405-11	CARBON 100 5% 1/4W	
R17	1-249-423-11	CARBON 3.3K 5% 1/4W	
R18	1-249-426-11	CARBON 5.6K 5% 1/4W	
R19	1-249-415-11	CARBON 680 5% 1/4W	

CA(RG) CA(B)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R20	1-249-397-11	CARBON	22	5%	1/4W	F
R21	1-249-413-11	CARBON	470	5%	1/4W	
R22	1-215-443-00	METAL	8.2K	1%	1/4W	
R23	1-215-447-00	METAL	12K	1%	1/4W	
R24	1-215-453-00	METAL	22K	1%	1/4W	
R25	1-215-460-00	METAL	43K	1%	1/4W	
R26	1-249-405-11	CARBON	100	5%	1/4W	
R27	1-249-405-11	CARBON	100	5%	1/4W	
R28	1-215-431-00	METAL	2.7K	1%	1/4W	
R29	1-249-429-11	CARBON	10K	5%	1/4W	
R30	1-215-469-00	METAL	100K	1%	1/4W	
R31	1-249-429-11	CARBON	10K	5%	1/4W	
R32	1-215-443-00	METAL	8.2K	1%	1/4W	
R33	1-215-443-00	METAL	8.2K	1%	1/4W	
R34	1-215-443-00	METAL	8.2K	1%	1/4W	
R35	1-247-887-00	CARBON	220K	5%	1/4W	
R36	1-247-887-00	CARBON	220K	5%	1/4W	
R37	1-247-887-00	CARBON	220K	5%	1/4W	
R38	1-249-441-11	CARBON	100K	5%	1/4W	
R39	1-215-469-00	METAL	100K	1%	1/4W	
R40	1-249-433-11	CARBON	22K	5%	1/4W	
R42	1-249-433-11	CARBON	22K	5%	1/4W	
R43	1-249-405-11	CARBON	100	5%	1/4W	
R44	1-249-429-11	CARBON	10K	5%	1/4W	
R101	1-215-401-11	METAL	150	1%	1/4W	
R102	1-215-401-11	METAL	150	1%	1/4W	
R103	1-215-473-00	METAL	150K	1%	1/4W	
R105	1-215-469-00	METAL	100K	1%	1/4W	
R106	1-215-465-00	METAL	68K	1%	1/4W	
R107	1-249-421-11	CARBON	2.2K	5%	1/4W	
R108	1-249-403-11	CARBON	68	5%	1/4W	F
R109	1-215-429-00	METAL	2.2K	1%	1/4W	
R111	1-249-421-11	CARBON	2.2K	5%	1/4W	
R112	1-215-383-00	METAL	27	1%	1/4W	
R116	1-215-473-00	METAL	150K	1%	1/4W	
R117	1-249-421-11	CARBON	2.2K	5%	1/4W	
R118	1-249-427-11	CARBON	6.8K	5%	1/4W	
R119	1-215-453-00	METAL	22K	1%	1/4W	
R120	1-215-469-00	METAL	100K	1%	1/4W	
R121	1-215-471-00	METAL	120K	1%	1/4W	
R122	1-215-441-00	METAL	6.8K	1%	1/4W	
R123	1-215-481-00	METAL	330K	1%	1/4W	
R124	1-215-433-00	METAL	3.3K	1%	1/4W	
R125	1-249-431-11	CARBON	15K	5%	1/4W	
R126	1-249-431-11	CARBON	15K	5%	1/4W	
R127	1-249-415-11	CARBON	680	5%	1/4W	
R128	1-249-405-11	CARBON	100	5%	1/4W	
R129	1-249-409-11	CARBON	220	5%	1/4W	F
R130	1-215-431-00	METAL	2.7K	1%	1/4W	
R131	1-202-549-00	SOLID	100	5%	1/2W	
R132	1-202-818-00	SOLID	1K	10%	1/2W	
R133	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R134	1-249-429-11	CARBON	10K	5%	1/4W	
R135	1-215-469-00	METAL	100K	1%	1/4W	
R136	1-202-549-00	SOLID	100	5%	1/2W	
R137	1-215-443-00	METAL	8.2K	1%	1/4W	
R138	1-215-435-00	METAL	3.9K	1%	1/4W	
R139	1-249-421-11	CARBON	2.2K	5%	1/4W	
R140	1-215-453-00	METAL	22K	1%	1/4W	
R141	1-215-421-00	METAL	1K	1%	1/4W	
R142	1-249-417-11	CARBON	1K	5%	1/4W	
R143	1-247-903-00	CARBON	1M	5%	1/4W	
R144	1-249-427-11	CARBON	6.8K	5%	1/4W	
R145	1-249-405-11	CARBON	100	5%	1/4W	
R146	1-247-895-00	CARBON	470K	5%	1/4W	
R147	1-215-457-00	METAL	33K	1%	1/4W	
R148	1-249-410-11	CARBON	270	5%	1/4W	F
R149	1-249-405-11	CARBON	100	5%	1/4W	
R201	1-215-401-11	METAL	150	1%	1/4W	
R202	1-215-401-11	METAL	150	1%	1/4W	
R203	1-215-461-00	METAL	47K	1%	1/4W	
R204	1-215-469-00	METAL	100K	1%	1/4W	
R205	1-215-469-00	METAL	100K	1%	1/4W	
R206	1-215-471-00	METAL	120K	1%	1/4W	
R207	1-249-421-11	CARBON	2.2K	5%	1/4W	
R208	1-249-403-11	CARBON	68	5%	1/4W	F
R209	1-215-429-00	METAL	2.2K	1%	1/4W	
R211	1-249-421-11	CARBON	2.2K	5%	1/4W	
R212	1-215-383-00	METAL	27	1%	1/4W	
R216	1-215-473-00	METAL	150K	1%	1/4W	
R217	1-249-421-11	CARBON	2.2K	5%	1/4W	
R218	1-249-427-11	CARBON	6.8K	5%	1/4W	
R219	1-215-453-00	METAL	22K	1%	1/4W	
R220	1-215-469-00	METAL	100K	1%	1/4W	
R221	1-215-471-00	METAL	120K	1%	1/4W	
R222	1-215-441-00	METAL	6.8K	1%	1/4W	
R223	1-215-481-00	METAL	330K	1%	1/4W	
R224	1-215-433-00	METAL	3.3K	1%	1/4W	
R225	1-249-431-11	CARBON	15K	5%	1/4W	
R226	1-249-431-11	CARBON	15K	5%	1/4W	
R227	1-249-415-11	CARBON	680	5%	1/4W	
R228	1-249-405-11	CARBON	100	5%	1/4W	
R229	1-249-409-11	CARBON	220	5%	1/4W	F
R230	1-215-431-00	METAL	2.7K	1%	1/4W	
R231	1-202-549-00	SOLID	100	5%	1/2W	
R232	1-202-818-00	SOLID	1K	10%	1/2W	
R233	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R234	1-215-469-00	METAL	100K	1%	1/4W	
R235	1-249-429-11	CARBON	10K	5%	1/4W	
R236	1-202-549-00	SOLID	100	5%	1/2W	
R237	1-215-443-00	METAL	8.2K	1%	1/4W	
R238	1-215-435-00	METAL	3.9K	1%	1/4W	
R239	1-249-421-11	CARBON	2.2K	5%	1/4W	
R240	1-215-453-00	METAL	22K	1%	1/4W	
R241	1-215-421-00	METAL	1K	1%	1/4W	
R242	1-249-417-11	CARBON	1K	5%	1/4W	
R243	1-247-903-00	CARBON	1M	5%	1/4W	
R244	1-249-427-11	CARBON	6.8K	5%	1/4W	
R245	1-249-405-11	CARBON	100	5%	1/4W	
R246	1-247-895-00	CARBON	470K	5%	1/4W	
R247	1-249-405-11	CARBON	100	5%	1/4W	

****

	*A-1335-018-A	CA (B) BOARD, COMPLETE

****

	*1-526-575-00	SOCKET, PLUG 1P
	1-564-507-11	PLUG, CONNECTOR 4P
	*1-564-516-11	PLUG, CONNECTOR 13P

<CAPACITOR>

C30	1-126-101-11	ELECT	100MF	20%	16V
C31	1-126-101-11	ELECT	100MF	20%	16V
C32	1-126-233-11	ELECT	22MF	20%	50V
C33	1-126-233-11	ELECT	22MF	20%	50V
C34	1-101-004-00	CERAMIC	0.01MF		50V

CA(B)

REF.NO.	PART NO.	DESCRIPTION			REMARK
C35	1-124-927-11	ELECT	4.7MF	20%	50V
C36	1-126-101-11	ELECT	100MF	20%	16V
C37	1-126-233-11	ELECT	22MF	20%	50V
C38	1-101-004-00	CERAMIC	0.01MF		50V
C39	1-102-978-00	CERAMIC	220PF	5%	50V
C40	1-102-978-00	CERAMIC	220PF	5%	50V
C41	1-102-973-00	CERAMIC	100PF	5%	50V
C42	1-162-117-00	CERAMIC	100PF	10%	500V
C43	1-101-004-00	CERAMIC	0.01MF		50V
C44	1-126-233-11	ELECT	22MF	20%	50V
C45	1-101-004-00	CERAMIC	0.01MF		50V
C46	1-126-233-11	ELECT	22MF	20%	50V
C47	1-126-134-11	ELECT	4.7MF	20%	350V
C48	1-123-932-00	ELECT	4.7MF	20%	160V
C49	1-124-798-11	ELECT	1MF	20%	160V
C50	1-124-798-11	ELECT	1MF	20%	160V
C51	1-102-050-00	CERAMIC	0.01MF	99%	500V
C52	1-102-050-00	CERAMIC	0.01MF	99%	500V
C53	1-124-903-11	ELECT	1MF	20%	50V
C301	1-124-282-00	ELECT	22MF	20%	16V
C302	1-124-910-11	ELECT	47MF	20%	50V
C303	1-126-101-11	ELECT	100MF	20%	16V
C304	1-126-101-11	ELECT	100MF	20%	16V
C305	1-126-233-11	ELECT	22MF	20%	50V
C306	1-102-973-00	CERAMIC	100PF	5%	50V
C307	1-102-976-00	CERAMIC	180PF	5%	50V
C308	1-124-799-11	ELECT	2.2MF	20%	160V
C309	1-124-799-11	ELECT	2.2MF	20%	160V
C310	1-124-634-11	ELECT	1MF	20%	250V
C311	1-126-233-11	ELECT	22MF	20%	50V
C312	1-136-165-00	FILM	0.1MF	5%	50V
C313	1-136-165-00	FILM	0.1MF	5%	50V
C314	1-126-174-51	ELECT	10MF	20%	350V
C315	1-102-038-00	CERAMIC	0.001MF		500V
C316	1-102-050-00	CERAMIC	0.01MF	99%	500V
C317	1-124-768-11	ELECT	4.7MF	20%	50V
C318	1-101-004-00	CERAMIC	0.01MF		50V
C319	1-136-165-00	FILM	0.1MF	5%	50V
C320	1-124-903-11	ELECT	1MF	20%	50V
C321	1-126-233-11	ELECT	22MF	20%	50V
C322	1-126-233-11	ELECT	22MF	20%	50V
C323	1-126-233-11	ELECT	22MF	20%	50V
C324	1-102-973-00	CERAMIC	100PF	5%	50V
C327	1-101-004-00	CERAMIC	0.01MF		50V
C350	1-126-101-11	ELECT	100MF	20%	16V
C351	1-126-101-11	ELECT	100MF	20%	16V
		<DIODE>			
D30	8-719-911-19	DIODE 1SS119			
D31	8-719-901-83	DIODE 1SS83			
D32	8-719-901-83	DIODE 1SS83			
D33	8-719-911-19	DIODE 1SS119			
D34	8-719-911-19	DIODE 1SS119			
D35	8-719-900-95	DIODE V09G			
D36	8-719-900-95	DIODE V09G			
D37	8-719-971-20	DIODE ERC38-06			
D38	8-719-110-31	DIODE RD12ESB2			
D39	8-719-901-83	DIODE 1SS83			
D301	8-719-901-83	DIODE 1SS83			
D303	8-719-109-51	DIODE RD2.0ESB2			
D304	8-719-911-19	DIODE 1SS119			
D305	8-719-901-83	DIODE 1SS83			
D306	8-719-911-19	DIODE 1SS119			

REF.NO.	PART NO.	DESCRIPTION			REMARK
D307	8-719-911-19	DIODE 1SS119			
D309	8-719-911-19	DIODE 1SS119			
D310	8-719-109-51	DIODE RD2.0ESB2			
D311	8-719-911-19	DIODE 1SS119			
D312	8-719-911-19	DIODE 1SS119			
D313	8-719-911-19	DIODE 1SS119			
D314	8-719-110-36	DIODE RD13ESB2			
D315	8-719-109-66	DIODE RD3.3ESB2			
D316	8-719-911-19	DIODE 1SS119			
		<IC>			
IC301	8-749-922-43	IC VPH05A			
IC302	8-759-503-91	IC TL082ACP			
IC303	8-749-920-88	IC SNY-8C02			
IC304	8-749-923-15	IC TY885002A			
IC305	8-749-921-91	IC TY885003A			
		<COIL>			
L301	1-408-880-00	INDUCTOR	0.68UH		
		<TRANSISTOR>			
Q30	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q31	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q32	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q33	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q34	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q35	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q36	8-729-820-82	TRANSISTOR 2SA1208-S			
Q37	8-729-820-82	TRANSISTOR 2SA1208-S			
Q38	8-729-255-12	TRANSISTOR 2SC2551-O			
Q39	8-729-255-12	TRANSISTOR 2SC2551-O			
Q40	8-729-820-82	TRANSISTOR 2SA1208-S			
Q41	8-729-903-68	TRANSISTOR 2SD982			
Q42	8-729-801-88	TRANSISTOR 2SA1381-E			
Q43	8-729-900-36	TRANSISTOR DTC124ES			
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q302	8-729-140-50	TRANSISTOR 2SC3209LK			
Q303	8-729-801-88	TRANSISTOR 2SA1381-E			
Q304	8-729-801-88	TRANSISTOR 2SA1381-E			
Q305	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q306	8-729-140-50	TRANSISTOR 2SC3209LK			
Q307	8-729-801-88	TRANSISTOR 2SA1381-E			
Q308	8-729-900-63	TRANSISTOR DTA124ES			
Q309	8-729-900-63	TRANSISTOR DTA124ES			
Q310	8-729-900-36	TRANSISTOR DTC124ES			
Q311	8-729-105-74	TRANSISTOR 2SK523-M1			
Q312	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q313	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q314	8-729-900-36	TRANSISTOR DTC124ES			
		<RESISTOR>			
R50	1-249-421-11	CARBON	2.2K	5%	1/4W
R51	1-249-427-11	CARBON	6.8K	5%	1/4W
R52	1-249-393-11	CARBON	10	5%	1/4W
R53	1-249-427-11	CARBON	6.8K	5%	1/4W
R54	1-215-437-00	METAL	4.7K	1%	1/4W
R55	1-215-439-00	METAL	5.6K	1%	1/4W
R56	1-215-443-00	METAL	8.2K	1%	1/4W
R57	1-249-405-11	CARBON	100	5%	1/4W
R58	1-249-441-11	CARBON	100K	5%	1/4W

CA(B) DM DA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R59	1-249-429-11	CARBON	10K	5%	1/4W	
R60	1-249-425-11	CARBON	4.7K	5%	1/4W	
R61	1-249-429-11	CARBON	10K	5%	1/4W	
R62	1-249-429-11	CARBON	10K	5%	1/4W	
R63	1-249-421-11	CARBON	2.2K	5%	1/4W	
R64	1-249-425-11	CARBON	4.7K	5%	1/4W	
R65	1-249-425-11	CARBON	4.7K	5%	1/4W	
R66	1-249-417-11	CARBON	1K	5%	1/4W	F
R67	1-249-403-11	CARBON	68	5%	1/4W	
R68	1-249-397-11	CARBON	22	5%	1/4W	F
R69	1-249-397-11	CARBON	22	5%	1/4W	F
R70	1-249-399-11	CARBON	33	5%	1/4W	
R71	1-249-399-11	CARBON	33	5%	1/4W	
R72	1-249-397-11	CARBON	22	5%	1/4W	F
R73	1-249-403-11	CARBON	68	5%	1/4W	
R74	1-249-429-11	CARBON	10K	5%	1/4W	F
R75	1-249-429-11	CARBON	10K	5%	1/4W	F
R76	1-202-719-00	SOLID	1M	10%	1/2W	
R77	1-247-903-00	CARBON	1M	5%	1/4W	
R78	1-249-441-11	CARBON	100K	5%	1/4W	
R301	1-215-401-11	METAL	150	1%	1/4W	
R302	1-215-401-11	METAL	150	1%	1/4W	
R303	1-215-461-00	METAL	47K	1%	1/4W	
R304	1-215-469-00	METAL	100K	1%	1/4W	
R305	1-215-469-00	METAL	100K	1%	1/4W	
R306	1-215-473-00	METAL	150K	1%	1/4W	
R307	1-249-421-11	CARBON	2.2K	5%	1/4W	
R308	1-249-403-11	CARBON	68	5%	1/4W	
R309	1-215-429-00	METAL	2.2K	1%	1/4W	
R311	1-249-421-11	CARBON	2.2K	5%	1/4W	
R312	1-215-383-00	METAL	27	1%	1/4W	
R316	1-215-473-00	METAL	150K	1%	1/4W	
R317	1-249-421-11	CARBON	2.2K	5%	1/4W	
R318	1-249-427-11	CARBON	6.8K	5%	1/4W	
R319	1-215-453-00	METAL	22K	1%	1/4W	
R320	1-215-469-00	METAL	100K	1%	1/4W	
R321	1-215-471-00	METAL	120K	1%	1/4W	
R322	1-215-441-00	METAL	6.8K	1%	1/4W	
R323	1-215-481-00	METAL	330K	1%	1/4W	
R324	1-215-433-00	METAL	3.3K	1%	1/4W	
R325	1-249-431-11	CARBON	15K	5%	1/4W	
R326	1-249-431-11	CARBON	15K	5%	1/4W	
R327	1-249-415-11	CARBON	680	5%	1/4W	
R328	1-249-405-11	CARBON	100	5%	1/4W	
R329	1-249-409-11	CARBON	220	5%	1/4W	F
R330	1-215-431-00	METAL	2.7K	1%	1/4W	
R331	1-202-549-00	SOLID	100	5%	1/2W	
R332	1-202-818-00	SOLID	1K	10%	1/2W	
R333	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R334	1-215-469-00	METAL	100K	1%	1/4W	
R335	1-249-429-11	CARBON	10K	5%	1/4W	
R336	1-202-549-00	SOLID	100	5%	1/2W	
R337	1-215-443-00	METAL	8.2K	1%	1/4W	
R338	1-215-435-00	METAL	3.9K	1%	1/4W	
R339	1-249-421-11	CARBON	2.2K	5%	1/4W	
R340	1-215-453-00	METAL	22K	1%	1/4W	
R341	1-215-421-00	METAL	1K	1%	1/4W	
R342	1-249-417-11	CARBON	1K	5%	1/4W	
R343	1-247-903-00	CARBON	1M	5%	1/4W	
R344	1-249-427-11	CARBON	6.8K	5%	1/4W	
R345	1-249-405-11	CARBON	100	5%	1/4W	
R346	1-247-895-00	CARBON	470K	5%	1/4W	
R347	1-249-405-11	CARBON	100	5%	1/4W	
R348	1-247-903-00	CARBON	1M	5%	1/4W	
R349	1-249-423-11	CARBON	3.3K	5%	1/4W	
R351	1-215-447-00	METAL	12K	1%	1/4W	
R352	1-249-421-11	CARBON	2.2K	5%	1/4W	
R353	1-249-403-11	CARBON	68	5%	1/4W	F
R356	1-215-461-00	METAL	47K	1%	1/4W	

****

*1-629-830-11 DM BOARD
****

	1-506-348-XX	PIN, CONNECTOR 4P
	*1-506-348-XX	PIN, CONNECTOR 6P
	1-506-348-XX	PIN, CONNECTOR 3P
	1-506-348-XX	PIN, CONNECOTR 5P
	*1-508-742-00	PIN, CONNECTOR 3P
	*1-564-506-11	PLUG, CONNECTOR 3P
	1-564-507-11	PLUG, CONNECTOR 4P
	*1-564-509-11	PLUG, CONNECTOR 6P
	*1-564-514-11	PLUG, CONNECTOR 11P
	*1-564-515-11	PLUG, CONNECTOR 12P
	*1-564-516-11	PLUG, CONNECTOR 13P
	*1-568-982-11	CONNECTOR, FEMALE 96P
	*1-568-985-11	CONNECTOR, FEMALE 64P

<CAPACITOR>

C1	1-124-556-11	ELECT	2200MF	20%	16V	
C2	1-124-556-11	ELECT	2200MF	20%	16V	

<RESISTOR>

R1	1-215-908-00	METAL OXIDE	33	5%	3W	F
R2	1-215-908-00	METAL OXIDE	33	5%	3W	F
R3	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F
R4	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F
R5	1-216-475-11	METAL OXIDE	120	5%	3W	F

****

*A-1345-873-A DA BOARD, COMPLETE
****

*1-568-984-11 CONNECTOR, MALE 96P

<CAPACITOR>

C1	1-124-907-11	ELECT	10MF	20%	50V	
C2	1-126-101-11	ELECT	100MF	20%	16V	
C3	1-124-907-11	ELECT	10MF	20%	50V	
C4	1-126-101-11	ELECT	100MF	20%	16V	
C5	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C6	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C7	1-124-903-11	ELECT	1MF	20%	50V	
C8	1-136-153-00	FILM	0.01MF	5%	50V	
C9	1-124-903-11	ELECT	1MF	20%	50V	
C10	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C11	1-124-907-11	ELECT	10MF	20%	50V	
C12	1-124-903-11	ELECT	1MF	20%	50V	
C13	1-136-153-00	FILM	0.01MF	5%	50V	
C14	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C15	1-124-907-11	ELECT	10MF	20%	50V	
C16	1-124-903-11	ELECT	1MF	20%	50V	
C17	1-136-153-00	FILM	0.01MF	5%	50V	
C18	1-124-925-11	ELECT	2.2MF	20%	50V	
C19	1-124-903-11	ELECT	1MF	20%	50V	
C20	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	

REF.NO.	PART NO.	DESCRIPTION			REMARK
C21	1-124-907-11	ELECT	10MF	20%	50V
C22	1-124-903-11	ELECT	1MF	20%	50V
C23	1-136-153-00	FILM	0.01MF	5%	50V
C24	1-124-925-11	ELECT	2.2MF	20%	50V
C25	1-124-903-11	ELECT	1MF	20%	50V
C26	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C28	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C29	1-124-907-11	ELECT	10MF	20%	50V
C30	1-124-903-11	ELECT	1MF	20%	50V
C31	1-124-907-11	ELECT	10MF	20%	50V
C32	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C33	1-124-907-11	ELECT	10MF	20%	50V
C34	1-124-903-11	ELECT	1MF	20%	50V
C35	1-124-477-11	ELECT	47MF	20%	16V
C36	1-124-903-11	ELECT	1MF	20%	50V
C37	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C38	1-124-907-11	ELECT	10MF	20%	50V
C39	1-124-903-11	ELECT	1MF	20%	50V
C40	1-124-903-11	ELECT	1MF	20%	50V
C41	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C42	1-124-927-11	ELECT	4.7MF	20%	50V
C43	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C44	1-130-471-00	MYLAR	0.001MF	5%	50V
C45	1-124-907-11	ELECT	10MF	20%	50V
C46	1-124-925-11	ELECT	2.2MF	20%	50V
C47	1-124-907-11	ELECT	10MF	20%	50V
C48	1-124-925-11	ELECT	2.2MF	20%	50V
C49	1-136-153-00	FILM	0.01MF	5%	50V
C50	1-124-907-11	ELECT	10MF	20%	50V
C53	1-124-907-11	ELECT	10MF	20%	50V
C54	1-124-927-11	ELECT	4.7MF	20%	50V
C55	1-130-471-00	MYLAR	0.001MF	5%	50V
C56	1-130-471-00	FILM	0.001MF	5%	50V
C57	1-136-165-00	FILM	0.1MF	5%	50V
C58	1-124-119-00	ELECT	330MF	20%	16V
C59	1-124-120-11	ELECT	220MF	20%	16V
C60	1-124-925-11	ELECT	2.2MF	20%	50V
C61	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C62	1-124-925-11	ELECT	2.2MF	20%	50V
C63	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C71	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C73	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C74	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C75	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C76	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C79	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C81	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C82	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C83	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C84	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C85	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C86	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C87	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C88	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C89	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C90	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C91	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C92	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C93	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C94	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C95	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C96	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C97	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C98	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C99	1-136-165-00	FILM	0.1MF	5%	50V
C100	1-136-153-00	FILM	0.01MF	5%	50V
C101	1-136-153-00	FILM	0.01MF	5%	50V
C102	1-124-034-51	ELECT	33MF	20%	16V
C103	1-124-556-11	ELECT	2200MF	20%	16V
C104	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C105	1-124-907-11	ELECT	10MF	20%	50V
C156	1-124-907-11	ELECT	10MF	20%	50V
C158	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C201	1-124-907-11	ELECT	10MF	20%	50V
C202	1-136-153-00	FILM	0.01MF	5%	50V
C203	1-136-165-00	FILM	0.1MF	5%	50V
C204	1-124-927-11	ELECT	4.7MF	20%	50V
C205	1-124-903-11	ELECT	1MF	20%	50V
C206	1-124-903-11	ELECT	1MF	20%	50V
C207	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C208	1-124-903-11	ELECT	1MF	20%	50V
C209	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C210	1-124-907-11	ELECT	10MF	20%	50V
C211	1-124-477-11	ELECT	47MF	20%	16V
C212	1-126-233-11	ELECT	22MF	20%	50V
C213	1-124-925-11	ELECT	2.2MF	20%	50V
C214	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C215	1-124-925-11	ELECT	2.2MF	20%	50V
C216	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C217	1-124-907-11	ELECT	10MF	20%	50V
C218	1-124-927-11	ELECT	4.7MF	20%	50V
C219	1-124-925-11	ELECT	2.2MF	20%	50V
C220	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C221	1-124-925-11	ELECT	2.2MF	20%	50V
C222	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C223	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C224	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C231	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C232	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C233	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C234	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C235	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C236	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C237	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C238	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C239	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C240	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C241	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C242	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C243	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C244	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C245	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C248	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C249	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C252	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C253	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C254	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C255	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C256	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C257	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C258	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C259	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C260	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C261	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C262	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C263	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C264	1-163-031-11	CERAMIC CHIP	0.01MF		50V

DA

REF.NO.	PART NO.	DESCRIPTION		REMARK
C265	1-163-031-11	CERAMIC CHIP 0.01MF		50V
C266	1-163-031-11	CERAMIC CHIP 0.01MF		50V
C300	1-124-925-11	ELECT 2.2MF	20%	50V
C301	1-163-031-11	CERAMIC CHIP 0.01MF		50V
C302	1-124-925-11	ELECT 2.2MF	20%	50V
C303	1-163-031-11	CERAMIC CHIP 0.01MF		50V
C401	1-126-101-11	ELECT 100MF	20%	16V
C402	1-126-101-11	ELECT 100MF	20%	16V
C403	1-124-907-11	ELECT 10MF	20%	50V
C405	1-124-907-11	ELECT 10MF	20%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-900-95	DIODE V09G	
D2	8-719-900-95	DIODE V09G	
D3	8-719-400-18	DIODE MA152WK	
D4	8-719-400-18	DIODE MA152WK	
D5	8-719-948-45	DIODE ERA22-08	
D6	8-719-106-71	DIODE RD12M-B2	
D8	8-719-400-18	DIODE MA152WK	
D9	8-719-400-18	DIODE MA152WK	
D10	8-719-400-18	DIODE MA152WK	
D11	8-719-400-18	DIODE MA152WK	
D12	8-719-400-18	DIODE MA152WK	
D13	8-719-104-34	DIODE 1S2836	
D14	8-719-911-19	DIODE 1SS119	
D201	8-719-800-76	DIODE 1SS226	
D202	8-719-400-18	DIODE MA152WK	
D203	8-719-400-18	DIODE MA152WK	
D204	8-719-400-18	DIODE MA152WK	
D205	8-719-800-76	DIODE 1SS226	
D206	8-719-400-18	DIODE MA152WK	
D207	8-719-400-18	DIODE MA152WK	
D208	8-719-400-18	DIODE MA152WK	
D209	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-604-39	IC M5F78M12L	
IC2	8-759-982-48	IC RC79L12A	
IC3	8-759-300-78	IC HD14538BFP	
IC4	8-759-100-96	IC UPC4558G2	
IC5	8-759-300-78	IC HD14538BFP	
IC6	8-759-100-96	IC UPC4558G2	
IC8	8-759-100-93	IC UPC393G2	
IC9	8-759-300-78	IC HD14538BFP	
IC10	8-759-114-06	IC UPC814G2-1	
IC11	8-759-300-78	IC HD14538BFP	
IC12	8-759-114-06	IC UPC814G2-1	
IC13	8-759-300-78	IC HD14538BFP	
IC14	8-749-920-80	IC SBX4011-01	
IC15	8-759-100-96	IC UPC4558G2	
IC16	8-759-114-06	IC UPC814G2-1	
IC17	8-759-300-71	IC HD14053BFP	
IC18	8-759-300-78	IC HD14538BFP	
IC19	8-759-100-93	IC UPC393G2	
IC201	8-752-033-65	IC CXA1158P	
IC202	8-759-925-74	IC SN74HC04ANS	
IC203	8-759-114-06	IC UPC814G2-1	
IC204	8-759-114-06	IC UPC814G2-1	
IC205	8-759-114-06	IC UPC814G2-1	
IC206	8-759-114-06	IC UPC814G2-1	
IC207	8-759-114-06	IC UPC814G2-1	
IC208	8-759-100-96	IC UPC4558G2	
IC209	8-759-100-96	IC UPC4558G2	
IC211	8-759-100-96	IC UPC4558G2	
IC213	8-759-114-06	IC UPC814G2-1	
IC214	8-759-114-06	IC UPC814G2-1	
IC215	8-759-114-06	IC UPC814G2-1	
IC217	8-759-114-06	IC UPC814G2-1	
IC218	8-759-300-71	IC HD14053BFP	
IC219	8-759-114-06	IC UPC814G2-1	
IC220	8-759-114-06	IC UPC814G2-1	
IC221	8-759-926-11	IC SN74HC138ANS	
IC401	8-759-100-93	IC UPC393G2	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-459-155-00	COIL (WITH CORE) 45UH	
L2	1-459-155-00	COIL (WITH CORE) 45UH	
L3	1-459-155-00	COIL (WITH CORE) 45UH	
L401	1-459-155-00	COIL (WITH CORE) 45UH	
L402	1-459-155-00	COIL (WITH CORE) 45UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2	8-729-216-22	TRANSISTOR 2SA1162-G	
Q3	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q4	8-729-216-22	TRANSISTOR 2SA1162-G	
Q5	8-729-216-22	TRANSISTOR 2SA1162-G	
Q6	8-729-216-22	TRANSISTOR 2SA1162-G	
Q7	8-729-216-22	TRANSISTOR 2SA1162-G	
Q8	8-729-216-22	TRANSISTOR 2SA1162-G	
Q9	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q10	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q11	8-729-105-72	TRANSISTOR 2SK523-L1	
Q12	8-729-216-22	TRANSISTOR 2SA1162-G	
Q13	8-729-216-22	TRANSISTOR 2SA1162-G	
Q14	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q15	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q16	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q17	8-729-903-82	TRANSISTOR FMW2	
Q18	8-729-920-59	TRANSISTOR IMX2	
Q19	8-729-904-04	TRANSISTOR FMS2	
Q20	8-729-926-23	TRANSISTOR FMW5	
Q21	8-729-926-23	TRANSISTOR FMW5	
Q22	8-729-920-59	TRANSISTOR IMX2	
Q23	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q24	8-729-216-22	TRANSISTOR 2SA1162-G	
Q25	8-729-901-01	TRANSISTOR DTC144EK	
Q26	8-729-901-01	TRANSISTOR DTC144EK	
Q27	8-729-901-01	TRANSISTOR DTC144EK	
Q29	8-729-901-01	TRANSISTOR DTC144EK	
Q30	8-729-901-01	TRANSISTOR DTC144EK	
Q31	8-729-926-23	TRANSISTOR FMW5	
Q32	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q33	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q34	8-729-216-22	TRANSISTOR 2SA1162-G	
Q201	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q202	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q203	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q204	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q205	8-729-903-82	TRANSISTOR FMW2	
Q206	8-729-920-59	TRANSISTOR IMX2	
Q207	8-729-904-04	TRANSISTOR FMS2	
Q208	8-729-926-23	TRANSISTOR FMW5	
Q209	8-729-926-23	TRANSISTOR FMW5	

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q210	8-729-920-59	TRANSISTOR IMX2	
Q211	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q212	8-729-216-22	TRANSISTOR 2SA1162-G	
Q213	8-729-903-82	TRANSISTOR FMW2	
Q214	8-729-920-59	TRANSISTOR IMX2	
Q215	8-729-904-04	TRANSISTOR FMS2	
Q216	8-729-926-23	TRANSISTOR FMW5	
Q217	8-729-926-23	TRANSISTOR FMW5	
Q218	8-729-920-59	TRANSISTOR IMX2	
Q219	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q220	8-729-216-22	TRANSISTOR 2SA1162-G	
Q221	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q222	8-729-902-96	TRANSISTOR FMS1	
Q223	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q224	8-729-902-96	TRANSISTOR FMS1	
Q225	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q226	8-729-926-23	TRANSISTOR FMW5	
Q227	8-729-216-22	TRANSISTOR 2SA1162-G	
Q228	8-729-926-23	TRANSISTOR FMW5	
Q229	8-729-216-22	TRANSISTOR 2SA1162-G	
Q230	8-729-216-22	TRANSISTOR 2SA1162-G	
Q231	8-729-216-22	TRANSISTOR 2SA1162-G	
Q232	8-729-903-82	TRANSISTOR FMW2	
Q233	8-729-920-59	TRANSISTOR IMX2	
Q234	8-729-904-04	TRANSISTOR FMS2	
Q235	8-729-926-23	TRANSISTOR FMW5	
Q236	8-729-926-23	TRANSISTOR FMW5	
Q237	8-729-920-59	TRANSISTOR IMX2	
Q238	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q239	8-729-216-22	TRANSISTOR 2SA1162-G	
Q240	8-729-926-23	TRANSISTOR FMW5	
Q241	8-729-216-22	TRANSISTOR 2SA1162-G	
Q401	8-729-205-97	TRANSISTOR 2SC3668-Y	
Q402	8-729-205-95	TRANSISTOR 2SA1428-Y	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R3	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R4	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R5	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R6	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R7	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R8	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R9	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R10	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R11	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R12	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R13	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R14	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R15	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R16	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R17	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R18	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R19	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R20	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R21	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R22	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R23	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R24	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R25	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R26	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R29	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R30	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R31	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R32	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R33	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R34	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R35	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R36	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R39	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R41	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R42	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R43	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R46	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R47	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R49	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R50	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R51	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R52	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R53	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R54	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R55	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R56	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R57	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R58	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R59	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R60	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R61	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R62	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R63	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R64	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R65	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R66	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R67	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R68	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R69	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R70	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R71	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R72	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R73	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R74	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R75	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R76	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R77	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R78	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R79	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R80	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R81	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R82	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R83	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R84	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R85	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R86	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R87	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R88	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R89	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R90	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R91	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R92	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R93	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R94	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R95	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R96	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R97	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R99	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

DA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R100	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R101	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R102	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R103	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R104	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R105	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R106	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R107	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R108	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R109	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R110	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R111	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R112	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R113	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R114	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R115	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R116	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R117	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R118	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R119	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R120	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R121	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R122	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R123	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R124	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R125	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R126	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R127	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R128	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R129	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R130	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R131	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R132	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R133	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R134	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R135	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R136	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R137	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R138	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R139	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R140	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R141	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R142	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R143	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R144	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R145	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R146	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R147	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R148	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R150	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R151	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R152	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R153	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R154	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R155	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R156	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R157	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R158	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R159	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R160	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R161	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R163	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R164	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R165	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R168	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R169	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R170	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R171	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R172	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R173	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R174	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R175	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R176	1-247-881-00	CARBON	120K	5%	1/4W	
R177	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R178	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R179	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R180	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R181	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R182	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R183	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R184	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R185	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R186	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R187	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R188	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R189	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R190	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R191	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R192	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R195	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R196	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R199	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R201	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R203	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R204	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R205	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R206	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R207	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R209	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R210	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R211	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R212	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R213	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R214	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R215	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R216	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R217	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R218	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R219	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R220	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R221	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R222	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R223	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R224	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R225	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R226	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R227	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R228	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R229	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R230	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R231	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R232	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R233	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R234	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R235	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R236	1-216-025-00	METAL GLAZE	100	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R237	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R238	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R239	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R240	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R241	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R242	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R243	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R244	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R245	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R246	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R247	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R248	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R249	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R250	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R251	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R252	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R253	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R254	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R255	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R256	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R257	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R258	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R259	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R260	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R261	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R262	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R263	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R265	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R266	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R267	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R268	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R269	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R270	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R271	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R272	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R273	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R274	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R275	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R276	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R277	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R278	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R279	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R280	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R281	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R282	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R283	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R284	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R286	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R287	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R288	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R289	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R290	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R291	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R295	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R296	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R297	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R298	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R299	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R300	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R301	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R302	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R303	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R304	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R305	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R306	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R307	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R308	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R309	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R310	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R311	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R312	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R313	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R314	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R315	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R316	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R317	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R318	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R319	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R320	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R321	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R322	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R323	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R324	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R325	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R326	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R327	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R328	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R329	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R330	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R331	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R332	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R333	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R334	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R335	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R336	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R337	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R338	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R339	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R340	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R341	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R342	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R343	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R344	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R345	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R346	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R347	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R348	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R349	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R350	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R351	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R352	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R353	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R354	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R356	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R357	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R358	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R359	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R360	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R361	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R362	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R363	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R364	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R365	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R366	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R367	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R368	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R369	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	

DA DB

REF.NO.	PART NO.	DESCRIPTION				REMARK
R370	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R371	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R372	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R373	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R374	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R375	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R376	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R377	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R378	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R379	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R380	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R381	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R382	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R383	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R384	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R385	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R386	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R401	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R402	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R403	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R404	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R405	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R406	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R407	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R408	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R409	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R410	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R411	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R412	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R413	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R414	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R415	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R416	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R417	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R418	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R419	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R420	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R421	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

<VARIABLE RESISTOR>

RV1	1-237-502-21	RES, ADJ, CERMET 5K
RV2	1-237-503-21	RES, ADJ, CERMET 10K
RV3	1-237-502-21	RES, ADJ, CERMET 5K
RV4	1-237-505-21	RES, ADJ, CERMET 50K

<SWITCH>

S1	1-570-204-21	SWITCH, KEY BOARD
S2	1-570-204-21	SWITCH, KEY BOARD

****

*A-1345-901-A DB BOARD, COMPLETE
****

*1-568-984-11 CONNECTOR, MALE 96P

<CAPACITOR>

C501	1-124-915-11	ELECT	10MF	20%	16V
C502	1-124-915-11	ELECT	10MF	20%	16V
C503	1-124-915-11	ELECT	10MF	20%	16V
C504	1-124-915-11	ELECT	10MF	20%	16V
C505	1-124-915-11	ELECT	10MF	20%	16V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C506	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C507	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C508	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C509	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C510	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C511	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C512	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C513	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C514	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C515	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C516	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C517	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C518	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C519	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C520	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C521	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C522	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C523	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C524	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C525	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C526	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C527	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C528	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C529	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C530	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C531	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C532	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C533	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C534	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C535	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C536	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C537	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C538	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C539	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C540	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C541	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C542	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C543	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C544	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C545	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C546	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C547	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C548	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C549	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C550	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C551	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C552	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C553	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C554	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C555	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C556	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C557	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C558	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C559	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C560	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C561	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C562	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C563	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C564	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C565	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C566	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C567	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C568	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C569	1-163-031-11	CERAMIC CHIP 0.01MF	50V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C570	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C571	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C572	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C573	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C574	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C575	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C577	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C578	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C580	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C581	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C582	1-164-161-11	CERAMIC CHIP 0.0022MF 5%	50V
C583	1-164-161-11	CERAMIC CHIP 0.0022MF 5%	50V
C584	1-164-161-11	CERAMIC CHIP 0.0022MF 5%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D501	8-719-900-95	DIODE V09G	
D502	8-719-900-95	DIODE V09G	
D503	8-719-800-76	DIODE 1SS226	
D504	8-719-800-76	DIODE 1SS226	
D505	8-719-800-76	DIODE 1SS226	
D506	8-719-800-76	DIODE 1SS226	
D507	8-719-800-76	DIODE 1SS226	
D508	8-719-800-76	DIODE 1SS226	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC501	8-759-926-48	IC SN74HC244ANS	
IC502	8-759-926-48	IC SN74HC244ANS	
IC503	8-759-926-48	IC SN74HC244ANS	
IC504	8-759-926-48	IC SN74HC244ANS	
IC505	8-759-926-11	IC SN74HC138ANS	
IC506	8-759-926-11	IC SN74HC138ANS	
IC507	8-759-926-11	IC SN74HC138ANS	
IC508	8-759-926-11	IC SN74HC138ANS	
IC509	8-759-926-11	IC SN74HC138ANS	
IC510	8-759-926-11	IC SN74HC138ANS	
IC511	8-759-995-64	IC MB86023	
IC512	8-759-995-64	IC MB86023	
IC513	8-759-995-64	IC MB86023	
IC514	8-759-995-64	IC MB86023	
IC515	8-759-995-64	IC MB86023	
IC516	8-759-995-64	IC MB86023	
IC517	8-759-995-64	IC MB86023	
IC518	8-759-995-64	IC MB86023	
IC519	8-759-995-64	IC MB86023	
IC520	8-759-995-64	IC MB86023	
IC521	8-759-995-64	IC MB86023	
IC522	8-759-995-64	IC MB86023	
IC523	8-759-995-64	IC MB86023	
IC524	8-759-995-64	IC MB86023	
IC525	8-759-995-64	IC MB86023	
IC526	8-759-995-64	IC MB86023	
IC527	8-759-995-64	IC MB86023	
IC528	8-759-995-64	IC MB86023	
IC529	8-759-995-64	IC MB86023	
IC530	8-759-995-64	IC MB86023	
IC531	8-759-995-64	IC MB86023	
IC532	8-759-995-64	IC MB86023	
IC533	8-759-995-64	IC MB86023	
IC534	8-759-995-64	IC MB86023	
IC535	8-759-995-64	IC MB86023	
IC536	8-759-995-64	IC MB86023	
IC537	8-759-995-64	IC MB86023	
IC538	8-759-995-64	IC MB86023	
IC539	8-759-995-64	IC MB86023	
IC540	8-759-995-64	IC MB86023	
IC541	8-759-995-64	IC MB86023	
IC542	8-759-995-64	IC MB86023	
IC543	8-759-995-64	IC MB86023	
IC544	8-759-995-64	IC MB86023	
IC545	8-759-995-64	IC MB86023	
IC546	8-759-995-64	IC MB86023	
IC547	8-759-100-96	IC UPC4558G2	
IC548	8-759-100-96	IC UPC4558G2	
IC549	8-759-114-06	IC UPC814G2-1	
IC550	8-759-114-06	IC UPC814G2-1	
IC551	8-759-114-06	IC UPC814G2-1	
IC552	8-759-147-47	IC UPC-1093T	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L501	1-459-155-00	COIL (WITH CORE) 45UH	
L502	1-459-155-00	COIL (WITH CORE) 45UH	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R501	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R502	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R503	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R504	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R505	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R506	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R507	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R508	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R509	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R510	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R511	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R512	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R513	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R514	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R515	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R516	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R517	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R518	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R519	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R520	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R521	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R522	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R523	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R524	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R525	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R526	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R527	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R528	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R529	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R530	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R531	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R532	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R533	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R534	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R535	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R536	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R537	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R538	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R539	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R540	1-216-627-11	METAL CHIP 100 0.50% 1/10W	

DB

REF.NO.	PART NO.	DESCRIPTION				REMARK
R541	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R542	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R543	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R544	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R545	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R546	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R547	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R548	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R549	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R550	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R551	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R552	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R553	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R554	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R555	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R556	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R557	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R558	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R559	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R560	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R561	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R562	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R563	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R565	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R566	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R567	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R568	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R569	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R570	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R571	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R572	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R573	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R574	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R575	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R576	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R577	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R578	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R579	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R580	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R581	1-216-676-11	METAL CHIP	11K	0.50%	1/10W	
R582	1-216-676-11	METAL CHIP	11K	0.50%	1/10W	
R583	1-216-676-11	METAL CHIP	11K	0.50%	1/10W	
R584	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R585	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R586	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R587	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R588	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R592	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R593	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R594	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R595	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R596	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R597	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R598	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R599	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R601	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R602	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R603	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R604	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R606	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R607	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R608	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R609	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R610	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R611	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R612	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R613	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R614	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R615	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R616	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R617	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R618	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R619	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R620	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R621	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R622	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R623	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R624	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R625	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R626	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R627	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R628	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R629	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R630	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R631	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R632	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R633	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R634	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R635	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R636	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R637	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R638	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R639	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R640	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R641	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R642	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R643	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R644	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R645	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R646	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R647	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R648	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R649	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R650	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R651	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R652	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R653	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R654	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R655	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R656	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R657	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R658	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R659	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R660	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R661	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R662	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R663	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R664	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R665	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R666	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R667	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R668	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R669	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R670	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R671	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R672	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R673	1-216-627-11	METAL CHIP	100	0.50%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R674	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R675	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R676	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R677	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R678	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R679	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R680	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R681	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R682	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R683	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R684	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R685	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R686	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R687	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R688	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R689	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R690	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R691	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R692	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R693	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R694	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R695	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R696	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R697	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R698	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R699	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R700	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R701	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R702	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R703	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R704	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R705	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R706	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R707	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R708	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R709	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R710	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R711	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R712	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R713	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R714	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R715	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R716	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R717	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R718	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R719	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R720	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R721	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R722	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R723	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R724	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R725	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R726	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R727	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R728	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R729	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R801	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R802	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R803	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R804	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R805	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R806	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R807	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R808	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R809	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R810	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R811	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R812	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R813	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R814	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R815	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R816	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R817	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R818	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R819	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R820	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R821	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	

****

	*A-1345-903-A	E BOARD, COMPLETE *****************
	*1-508-742-00	PIN, CONNECTOR 3P
	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
	*1-564-509-11	PLUG, CONNECTOR 6P
	*1-564-514-11	PLUG, CONNECTOR 11P
	*1-564-516-11	PLUG, CONNECTOR 13P
	*1-568-536-11	PLUG (MINIATURE DY) 6P
	*4-341-751-01	EYELET
	*4-341-752-01	EYELET

<CAPACITOR>

C1	1-126-899-11	ELECT	3900MF	20%	16V
C2	1-126-899-11	ELECT	3900MF	20%	16V
C3	1-126-899-11	ELECT	3900MF	20%	16V
C4	1-102-824-00	CERAMIC	470PF	5%	50V
C5	1-136-153-00	FILM	0.01MF	5%	50V
C6	1-102-824-00	CERAMIC	470PF	5%	50V
C7	1-102-824-00	CERAMIC	470PF	5%	50V
C8	1-136-153-00	FILM	0.01MF	5%	50V
C9	1-102-824-00	CERAMIC	470PF	5%	50V
C10	1-136-153-00	FILM	0.01MF	5%	50V
C11	1-102-824-00	CERAMIC	470PF	5%	50V
C12	1-102-824-00	CERAMIC	470PF	5%	50V
C13	1-130-908-00	FILM	0.0039MF	3%	1.6KV
C14	1-130-908-00	FILM	0.0039MF	3%	1.6KV
C15	1-124-585-11	ELECT	3300MF	20%	10V
C16	1-124-585-11	ELECT	3300MF	20%	10V
C17	1-123-935-00	ELECT	33MF	20%	160V
C18	1-129-996-00	FILM	0.22MF	20%	630V
C19	1-124-585-11	ELECT	3300MF	20%	10V
C21	1-136-945-11	FILM	8.2MF	5%	200V
C22	1-136-945-11	FILM	8.2MF	5%	200V
C23	1-136-945-11	FILM	8.2MF	5%	200V
C24	1-136-945-11	FILM	8.2MF	5%	200V
C30	1-136-613-11	FILM	0.0068MF	3%	2KV
C31	1-106-391-12	MYLAR	0.1MF	10%	200V
C32	1-124-907-11	ELECT	10MF	20%	50V
C35	1-102-244-00	CERAMIC	220PF	10%	500V
C36	1-164-747-11	CERAMIC	330PF	10%	1.5KV
C37	1-164-747-11	CERAMIC	330PF	10%	1.5KV
C38	1-164-747-11	CERAMIC	330PF	10%	1.5KV
C101	1-102-973-00	CERAMIC	100PF	5%	50V
C102	1-136-159-00	FILM	0.033MF	5%	50V
C104	1-136-165-00	FILM	0.1MF	5%	50V
C105	1-136-165-00	FILM	0.1MF	5%	50V
C106	1-126-101-11	ELECT	100MF	20%	16V

E

REF.NO.	PART NO.	DESCRIPTION			REMARK
C109	1-124-903-11	ELECT	1MF	20%	50V
C110	1-126-101-11	ELECT	100MF	20%	16V
C111	1-126-101-11	ELECT	100MF	20%	16V
C112	1-126-101-11	ELECT	100MF	20%	16V
C113	1-126-233-11	ELECT	22MF	20%	50V
C114	1-124-499-11	ELECT	1MF	20%	50V
C115	1-136-153-00	FILM	0.01MF	5%	50V
C116	1-130-475-00	MYLAR	0.0022MF	5%	50V
C117	1-102-973-00	CERAMIC	100PF	5%	50V
C118	1-136-165-00	FILM	0.1MF	5%	50V
C119	1-126-101-11	ELECT	100MF	20%	16V
C120	1-123-939-00	ELECT	10MF	20%	200V
C121	1-136-159-00	FILM	0.033MF	5%	50V
C122	1-123-024-21	ELECT	33MF		160V
C123	1-123-024-21	ELECT	33MF		160V
C124	1-125-499-11	ELECT(BLOCK)	220MF	20%	200V
C125	1-136-153-00	FILM	0.01MF	5%	50V
C126	1-130-471-00	MYLAR	0.001MF	5%	50V
C128	1-123-939-00	ELECT	10MF	20%	200V
C129	1-123-939-00	ELECT	10MF	20%	200V
C130	1-124-120-11	ELECT	220MF	20%	16V
C131	1-124-120-11	ELECT	220MF	20%	16V
C132	1-123-024-21	ELECT	33MF		160V
C133	1-124-499-11	ELECT	1MF	20%	50V
C134	1-124-478-11	ELECT	100MF	20%	25V
C135	1-124-478-11	ELECT	100MF	20%	25V
C136	1-126-233-11	ELECT	22MF	20%	50V
C137	1-102-973-00	CERAMIC	100PF	5%	50V
C138	1-124-907-11	ELECT	10MF	20%	50V
C139	1-124-360-00	ELECT	1000MF	20%	16V
C140	1-136-169-00	FILM	0.22MF	5%	50V
C141	1-130-471-00	MYLAR	0.001MF	5%	50V
C142	1-125-499-11	ELECT(BLOCK)	220MF	20%	200V
C143	1-102-824-00	CERAMIC	470PF	5%	50V
C144	1-136-165-00	FILM	0.1MF	5%	50V
C145	1-136-153-00	FILM	0.01MF	5%	50V
C146	1-136-173-00	FILM	0.47MF	5%	50V
C147	1-136-173-00	FILM	0.47MF	5%	50V
C148	1-126-101-11	ELECT	100MF	20%	16V
C149	1-124-907-11	ELECT	10MF	20%	50V
C150	1-130-471-00	MYLAR	0.001MF	5%	50V
C151	1-124-903-11	ELECT	1MF	20%	50V
C152	1-136-165-00	FILM	0.1MF	5%	50V
C153	1-124-034-51	ELECT	33MF	20%	16V
C154	1-136-165-00	FILM	0.1MF	5%	50V
C155	1-136-153-00	FILM	0.01MF	5%	50V
C156	1-136-165-00	FILM	0.1MF	5%	50V
C157	1-136-157-00	FILM	0.022MF	5%	50V
C158	1-124-046-00	ELECT	10MF		160V
C159	1-136-111-00	FILM	1MF	5%	200V
C160	1-136-111-00	FILM	1MF	5%	200V
C161	1-124-903-11	ELECT	1MF	20%	50V
C162	1-136-111-00	FILM	1MF	5%	200V
C163	1-124-907-11	ELECT	10MF	20%	50V
C164	1-124-907-11	ELECT	10MF	20%	50V
C165	1-124-907-11	ELECT	10MF	20%	50V
C166	1-124-907-11	ELECT	10MF	20%	50V
C167	1-102-824-00	CERAMIC	470PF	5%	50V
C168	1-136-153-00	FILM	0.01MF	5%	50V
C169	1-124-768-11	ELECT	4.7MF	20%	50V
C170	1-124-034-51	ELECT	33MF	20%	16V
C171	1-136-165-00	FILM	0.1MF	5%	50V
C172	1-124-907-11	ELECT	10MF	20%	50V
C173	1-124-034-51	ELECT	33MF	20%	16V
C174	1-124-034-51	ELECT	33MF	20%	16V
C175	1-130-706-00	FILM	0.008MF	3%	1.6KV
C176	1-106-391-12	MYLAR	0.1MF	10%	200V
C177	1-124-907-11	ELECT	10MF	20%	50V
C178	1-101-004-00	CERAMIC	0.01MF		50V

<DIODE>

D1	8-719-970-89	DIODE DD50R
D7	8-719-908-20	DIODE ERC88-009
D8	8-719-908-20	DIODE ERC88-009
D9	8-719-979-58	DIODE EGP10D
D10	8-719-979-58	DIODE EGP10D
D11	8-719-901-19	DIODE V11N
D12	8-719-979-58	DIODE EGP10D
D13	8-719-312-71	DIODE RS3FS
D14	8-719-900-95	DIODE V09G
D15	8-719-933-02	DIODE ERD33-02
D103	8-719-911-19	DIODE 1SS119
D104	8-719-911-19	DIODE 1SS119
D105	8-719-948-45	DIODE ERA22-08
D106	8-719-948-45	DIODE ERA22-08
D107	8-719-911-19	DIODE 1SS119
D109	8-719-948-45	DIODE ERA22-08
D110	8-719-911-19	DIODE 1SS119
D111	8-719-911-19	DIODE 1SS119
D112	8-719-900-26	DIODE ERD29-08J
D113	8-719-911-19	DIODE 1SS119
D114	8-719-110-53	DIODE RD20ESB2
D115	8-719-110-53	DIODE RD20ESB2
D116	8-719-920-67	DIODE ERC91-02
D117	8-719-911-19	DIODE 1SS119
D118	8-719-948-45	DIODE ERA22-08
D119	8-719-911-19	DIODE 1SS119
D120	8-719-911-19	DIODE 1SS119
D121	8-719-911-19	DIODE 1SS119
D122	8-719-911-19	DIODE 1SS119
D123	8-719-911-19	DIODE 1SS119
D124	8-719-948-45	DIODE ERA22-08
D126	8-719-110-88	DIODE RD39ESB2
D127	8-719-110-41	DIODE RD15ESB2
D128	8-719-110-41	DIODE RD15ESB2
D129	8-719-110-41	DIODE RD15ESB2
D130	8-719-110-41	DIODE RD15ESB2
D131	8-719-911-19	DIODE 1SS119
D132	8-719-911-19	DIODE 1SS119
D133	8-719-911-19	DIODE 1SS119
D134	8-719-300-80	DIODE RU-1C
D135	8-719-300-80	DIODE RU-1C
D136	8-719-300-80	DIODE RU-1C
D137	8-719-300-80	DIODE RU-1C
D138	8-719-911-19	DIODE 1SS119
D139	8-719-911-19	DIODE 1SS119
D140	8-719-911-19	DIODE 1SS119
D141	8-719-911-19	DIODE 1SS119
D142	8-719-911-19	DIODE 1SS119
D143	8-719-911-19	DIODE 1SS119
D144	8-719-901-19	DIODE V11N
D145	8-719-911-19	DIODE 1SS119
D146	8-719-948-45	DIODE ERA22-08
D149	8-719-911-19	DIODE 1SS119

<FERRITE BEAD>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB1	1-410-396-41	FERRITE BEAD INDUCTOR	
FB2	1-410-396-41	FERRITE BEAD INDUCTOR	
FB3	1-410-396-41	FERRITE BEAD INDUCTOR	
FB4	1-410-396-41	FERRITE BEAD INDUCTOR	
FB5	1-410-396-41	FERRITE BEAD INDUCTOR	
		<IC>	
IC1	8-759-145-58	IC UPC4558C	
IC2	8-759-145-58	IC UPC4558C	
IC3	8-759-145-58	IC UPC4558C	
IC101	8-759-345-38	IC HD14538BP	
IC103	8-759-109-82	IC UPC814C	
IC104	8-759-145-58	IC UPC4558C	
IC105	8-759-145-58	IC UPC4558C	
IC106	8-759-145-58	IC UPC4558C	
IC107	8-759-014-95	IC MC1495L	
IC108	8-759-145-58	IC UPC4558C	
IC109	8-759-982-13	IC RC7812FA	
IC110	8-759-929-65	IC LM7912CT	
IC111	8-759-100-75	IC UPC1394C	
IC112	8-759-145-58	IC UPC4558C	
IC113	8-759-103-93	IC UPC393C	
IC114	8-759-103-93	IC UPC393C	
		<COIL>	
L100	1-459-155-00	COIL (WITH CORE) 45UH	
L102	1-459-155-00	COIL (WITH CORE) 45UH	
L103	1-459-155-00	COIL (WITH CORE) 45UH	
L104	1-459-155-00	COIL (WITH CORE) 45UH	
L106	1-459-483-00	COIL (WITH CORE)	
L107	1-410-093-11	INDUCTOR 33MMH	
L108	1-410-093-11	INDUCTOR 33MMH	
L109	1-459-104-00	COIL, DUST CORE	
L110	1-459-104-00	COIL, DUST CORE	
L111	1-410-093-11	INDUCTOR 33MMH	
L112	1-460-022-11	COIL, CHOKE 1.3MMH	
L113	1-410-680-31	INDUCTOR 330UH	
L114	1-410-686-11	INDUCTOR 1MMH	
L115	1-407-500-00	INDUCTOR 4.7MMH	
		<VARIABLE COIL>	
LV1	1-460-019-11	COIL, HORIZONTAL ADJUSTMENT	
LV2	1-460-019-11	COIL, HORIZONTAL ADJUSTMENT	
LV3	1-460-019-11	COIL, HORIZONTAL ADJUSTMENT	
		<TRANSISTOR>	
Q1	8-729-142-69	TRANSISTOR 2SK817	
Q2	8-729-142-68	TRANSISTOR 2SJ143	
Q3	8-729-142-69	TRANSISTOR 2SK817	
Q4	8-729-142-68	TRANSISTOR 2SJ143	
Q5	8-729-142-69	TRANSISTOR 2SK817	
Q6	8-729-142-68	TRANSISTOR 2SJ143	
Q7	8-729-820-71	TRANSISTOR 2SC3998CA	
Q21	8-729-801-75	TRANSISTOR 2SD1403	
Q22	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q101	8-729-105-74	TRANSISTOR 2SK523-M1	
Q102	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q106	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q107	8-729-140-96	TRANSISTOR 2SD774-34	
Q108	8-729-140-97	TRANSISTOR 2SB734-34	
Q109	8-729-105-74	TRANSISTOR 2SK523-M1	
Q110	8-729-143-42	TRANSISTOR 2SK929	
Q111	8-729-143-42	TRANSISTOR 2SK929	
Q112	8-729-142-68	TRANSISTOR 2SJ143	
Q113	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q115	8-729-926-42	TRANSISTOR XDC114ES	
Q116	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q117	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q118	8-729-105-74	TRANSISTOR 2SK523-M1	
Q120	8-729-802-71	TRANSISTOR 2SA1407-D	
Q121	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q127	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q128	8-729-926-42	TRANSISTOR XDC114ES	
Q129	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q130	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q131	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q132	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q133	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q134	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q135	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q136	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q137	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q138	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q139	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q140	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q141	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q142	8-729-143-42	TRANSISTOR 2SK929	
Q143	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q144	8-729-905-86	TRANSISTOR 2SC4054N	
Q145	8-729-402-03	TRANSISTOR 2SK755	
Q146	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q147	8-729-905-86	TRANSISTOR 2SC4054N	
Q148	8-729-802-71	TRANSISTOR 2SA1407-D	
		<RESISTOR>	
R1	1-216-393-00	METAL OXIDE 2.2 5% 3W	F
R2	1-216-393-00	METAL OXIDE 2.2 5% 3W	F
R3	1-216-393-00	METAL OXIDE 2.2 5% 3W	F
R4	1-249-417-11	CARBON 1K 5% 1/4W	
R5	1-215-445-00	METAL 10K 1% 1/4W	
R7	1-215-445-00	METAL 10K 1% 1/4W	
R8	1-215-445-00	METAL 10K 1% 1/4W	
R9	1-215-445-00	METAL 10K 1% 1/4W	
R10	1-249-417-11	CARBON 1K 5% 1/4W	
R11	1-214-824-11	METAL 22 1% 1/2W	
R12	1-214-824-11	METAL 22 1% 1/2W	
R13	1-214-824-11	METAL 22 1% 1/2W	
R14	1-249-417-11	CARBON 1K 5% 1/4W	
R15	1-215-445-00	METAL 10K 1% 1/4W	
R17	1-215-445-00	METAL 10K 1% 1/4W	
R18	1-215-445-00	METAL 10K 1% 1/4W	
R19	1-215-445-00	METAL 10K 1% 1/4W	
R20	1-249-417-11	CARBON 1K 5% 1/4W	
R21	1-214-832-00	METAL 47 1% 1/2W	
R22	1-214-832-00	METAL 47 1% 1/2W	
R23	1-214-832-00	METAL 47 1% 1/2W	
R24	1-249-417-11	CARBON 1K 5% 1/4W	
R25	1-215-445-00	METAL 10K 1% 1/4W	
R27	1-215-445-00	METAL 10K 1% 1/4W	
R28	1-215-445-00	METAL 10K 1% 1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R29	1-215-445-00	METAL	10K	1%	1/4W	
R30	1-249-417-11	CARBON	1K	5%	1/4W	
R31	1-214-824-11	METAL	22	1%	1/2W	
R32	1-214-824-11	METAL	22	1%	1/2W	
R33	1-214-824-11	METAL	22	1%	1/2W	
R34	1-214-824-11	METAL	22	1%	1/2W	
R35	1-214-824-11	METAL	22	1%	1/2W	
R36	1-214-824-11	METAL	22	1%	1/2W	
R37	1-214-832-00	METAL	47	1%	1/2W	
R38	1-214-832-00	METAL	47	1%	1/2W	
R39	1-214-832-00	METAL	47	1%	1/2W	
R40	1-214-824-11	METAL	22	1%	1/2W	
R41	1-214-824-11	METAL	22	1%	1/2W	
R42	1-214-824-11	METAL	22	1%	1/2W	
R51	1-249-479-11	CARBON	2.7	5%	1/2W	F
R52	1-249-479-11	CARBON	2.7	5%	1/2W	F
R53	1-249-479-11	CARBON	2.7	5%	1/2W	F
R54	1-215-857-11	METAL OXIDE	10	5%	1W	F
R55	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R56	1-247-716-11	CARBON	1.8K	5%	1/4W	F
R57	1-249-405-11	CARBON	100	5%	1/4W	
R58	1-249-405-11	CARBON	100	5%	1/4W	
R59	1-249-405-11	CARBON	100	5%	1/4W	
R60	1-249-405-11	CARBON	100	5%	1/4W	
R61	1-249-405-11	CARBON	100	5%	1/4W	
R62	1-249-405-11	CARBON	100	5%	1/4W	
R63	1-247-700-11	CARBON	100	5%	1/4W	F
R64	1-247-700-11	CARBON	100	5%	1/4W	F
R65	1-247-700-11	CARBON	100	5%	1/4W	F
R66	1-215-905-11	METAL OXIDE	10	5%	3W	F
R67	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R68	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R69	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R101	1-215-457-00	METAL	33K	1%	1/4W	
R102	1-249-429-11	CARBON	10K	5%	1/4W	
R103	1-249-429-11	CARBON	10K	5%	1/4W	
R109	1-249-429-11	CARBON	10K	5%	1/4W	
R110	1-249-417-11	CARBON	1K	5%	1/4W	
R111	1-249-429-11	CARBON	10K	5%	1/4W	
R112	1-249-425-11	CARBON	4.7K	5%	1/4W	
R113	1-249-405-11	CARBON	100	5%	1/4W	
R114	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-215-445-00	METAL	10K	1%	1/4W	
R116	1-215-445-00	METAL	10K	1%	1/4W	
R117	1-215-433-00	METAL	3.3K	1%	1/4W	
R118	1-249-423-11	CARBON	3.3K	5%	1/4W	
R119	1-215-457-00	METAL	33K	1%	1/4W	
R120	1-215-457-00	METAL	33K	1%	1/4W	
R121	1-215-445-00	METAL	10K	1%	1/4W	
R122	1-249-425-11	CARBON	4.7K	5%	1/4W	
R123	1-215-445-00	METAL	10K	1%	1/4W	
R124	1-215-445-00	METAL	10K	1%	1/4W	
R125	1-215-457-00	METAL	33K	1%	1/4W	
R126	1-215-457-00	METAL	33K	1%	1/4W	
R127	1-215-447-00	METAL	12K	1%	1/4W	
R128	1-215-445-00	METAL	10K	1%	1/4W	
R129	1-215-447-00	METAL	12K	1%	1/4W	
R130	1-249-425-11	CARBON	4.7K	5%	1/4W	
R131	1-215-445-00	METAL	10K	1%	1/4W	
R132	1-215-449-00	METAL	15K	1%	1/4W	
R133	1-249-425-11	CARBON	4.7K	5%	1/4W	
R134	1-215-453-00	METAL	22K	1%	1/4W	
R135	1-249-429-11	CARBON	10K	5%	1/4W	
R136	1-249-423-11	CARBON	3.3K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R137	1-249-423-11	CARBON	3.3K	5%	1/4W	
R138	1-249-423-11	CARBON	3.3K	5%	1/4W	
R139	1-249-425-11	CARBON	4.7K	5%	1/4W	
R140	1-249-417-11	CARBON	1K	5%	1/4W	
R141	1-249-421-11	CARBON	2.2K	5%	1/4W	
R142	1-249-421-11	CARBON	2.2K	5%	1/4W	
R143	1-249-417-11	CARBON	1K	5%	1/4W	
R144	1-249-421-11	CARBON	2.2K	5%	1/4W	
R145	1-249-423-11	CARBON	3.3K	5%	1/4W	
R146	1-249-437-11	CARBON	47K	5%	1/4W	
R147	1-249-421-11	CARBON	2.2K	5%	1/4W	
R148	1-249-437-11	CARBON	47K	5%	1/4W	
R149	1-249-417-11	CARBON	1K	5%	1/4W	
R150	1-215-461-00	METAL	47K	1%	1/4W	
R151	1-249-425-11	CARBON	4.7K	5%	1/4W	
R152	1-215-445-00	METAL	10K	1%	1/4W	
R153	1-215-445-00	METAL	10K	1%	1/4W	
R154	1-247-895-00	CARBON	470K	5%	1/4W	
R155	1-249-420-11	CARBON	1.8K	5%	1/4W	
R156	1-249-437-11	CARBON	47K	5%	1/4W	
R157	1-249-413-11	CARBON	470	5%	1/4W	
R158	1-249-405-11	CARBON	100	5%	1/4W	
R159	1-249-405-11	CARBON	100	5%	1/4W	
R160	1-249-417-11	CARBON	1K	5%	1/4W	
R161	1-215-467-00	METAL	82K	1%	1/4W	
R162	1-215-866-11	METAL OXIDE	330	5%	1W	F
R163	1-215-461-00	METAL	47K	1%	1/4W	
R164	1-249-421-11	CARBON	2.2K	5%	1/4W	
R165	1-215-445-00	METAL	10K	1%	1/4W	
R166	1-249-429-11	CARBON	10K	5%	1/4W	
R167	1-249-437-11	CARBON	47K	5%	1/4W	
R168	1-249-429-11	CARBON	10K	5%	1/4W	
R169	1-247-725-11	CARBON	10K	5%	1/4W	F
R170	1-249-425-11	CARBON	4.7K	5%	1/4W	
R171	1-249-417-11	CARBON	1K	5%	1/4W	
R172	1-249-417-11	CARBON	1K	5%	1/4W	
R173	1-216-389-11	METAL OXIDE	1	5%	3W	F
R174	1-216-388-11	METAL OXIDE	0.82	5%	3W	F
R176	1-247-713-11	CARBON	1K	5%	1/4W	F
R177	1-215-445-00	METAL	10K	1%	1/4W	
R178	1-249-417-11	CARBON	1K	5%	1/4W	
R179	1-249-429-11	CARBON	10K	5%	1/4W	
R180	1-215-433-00	METAL	3.3K	1%	1/4W	
R181	1-249-441-11	CARBON	100K	5%	1/4W	
R182	1-249-421-11	CARBON	2.2K	5%	1/4W	
R183	1-249-405-11	CARBON	100	5%	1/4W	
R184	1-249-425-11	CARBON	4.7K	5%	1/4W	
R186	1-249-437-11	CARBON	47K	5%	1/4W	
R187	1-215-461-00	METAL	47K	1%	1/4W	
R191	1-249-423-11	CARBON	3.3K	5%	1/4W	
R192	1-249-433-11	CARBON	22K	5%	1/4W	
R193	1-247-903-00	CARBON	1M	5%	1/4W	
R194	1-249-423-11	CARBON	3.3K	5%	1/4W	
R195	1-249-423-11	CARBON	3.3K	5%	1/4W	
R196	1-247-883-00	CARBON	150K	5%	1/4W	
R197	1-249-405-11	CARBON	100	5%	1/4W	
R198	1-215-447-00	METAL	12K	1%	1/4W	
R199	1-249-423-11	CARBON	3.3K	5%	1/4W	
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R202	1-249-417-11	CARBON	1K	5%	1/4W	
R203	1-249-453-11	CARBON	3.3	5%	1/4W	F
R204	1-249-429-11	CARBON	10K	5%	1/4W	
R205	1-249-427-11	CARBON	6.8K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R206	1-249-429-11	CARBON	10K	5%	1/4W	
R207	1-249-441-11	CARBON	100K	5%	1/4W	
R208	1-216-341-11	METAL OXIDE	0.22	5%	1W	F
R209	1-249-417-11	CARBON	1K	5%	1/4W	
R210	1-215-451-00	METAL	18K	1%	1/4W	
R212	1-249-431-11	CARBON	15K	5%	1/4W	
R213	1-249-429-11	CARBON	10K	5%	1/4W	
R214	1-215-883-11	METAL OXIDE	33	5%	2W	F
R215	1-249-417-11	CARBON	1K	5%	1/4W	
R216	1-249-423-11	CARBON	3.3K	5%	1/4W	
R217	1-249-399-11	CARBON	33	5%	1/4W	
R218	1-249-417-11	CARBON	1K	5%	1/4W	F
R219	1-215-445-00	METAL	10K	1%	1/4W	
R220	1-215-445-00	METAL	10K	1%	1/4W	
R221	1-249-476-11	CARBON	1.5	5%	1/2W	F
R222	1-249-441-11	CARBON	100K	5%	1/4W	
R223	1-249-429-11	CARBON	10K	5%	1/4W	
R224	1-249-429-11	CARBON	10K	5%	1/4W	
R225	1-249-421-11	CARBON	2.2K	5%	1/4W	
R226	1-215-445-00	METAL	10K	1%	1/4W	
R227	1-249-429-11	CARBON	10K	5%	1/4W	
R228	1-249-429-11	CARBON	10K	5%	1/4W	
R229	1-249-429-11	CARBON	10K	5%	1/4W	
R230	1-249-443-11	CARBON	0.47	5%	1/4W	F
R231	1-249-443-11	CARBON	0.47	5%	1/4W	F
R232	1-249-437-11	CARBON	47K	5%	1/4W	
R233	1-249-417-11	CARBON	1K	5%	1/4W	
R234	1-249-417-11	CARBON	1K	5%	1/4W	
R235	1-249-437-11	CARBON	47K	5%	1/4W	
R236	1-249-437-11	CARBON	47K	5%	1/4W	
R237	1-249-441-11	CARBON	100K	5%	1/4W	
R238	1-249-399-11	CARBON	33	5%	1/4W	
R239	1-249-423-11	CARBON	3.3K	5%	1/4W	
R240	1-249-441-11	CARBON	100K	5%	1/4W	
R241	1-249-437-11	CARBON	47K	5%	1/4W	
R242	1-215-461-00	METAL	47K	1%	1/4W	
R243	1-215-469-00	METAL	100K	1%	1/4W	
R244	1-249-423-11	CARBON	3.3K	5%	1/4W	
R245	1-216-441-00	METAL OXIDE	27K	5%	1W	F
R246	1-215-435-00	METAL	3.9K	1%	1/4W	
R247	1-249-421-11	CARBON	2.2K	5%	1/4W	
R248	1-249-425-11	CARBON	4.7K	5%	1/4W	
R249	1-215-421-00	METAL	1K	1%	1/4W	
R250	1-215-445-00	METAL	10K	1%	1/4W	
R251	1-247-887-00	CARBON	220K	5%	1/4W	
R252	1-249-429-11	CARBON	10K	5%	1/4W	
R254	1-249-405-11	CARBON	100	5%	1/4W	
R255	1-249-417-11	CARBON	1K	5%	1/4W	
R256	1-249-441-11	CARBON	100K	5%	1/4W	
R257	1-249-437-11	CARBON	47K	5%	1/4W	
R258	1-215-435-00	METAL	3.9K	1%	1/4W	
R259	1-215-439-00	METAL	5.6K	1%	1/4W	
R260	1-215-445-00	METAL	10K	1%	1/4W	
R261	1-249-429-11	CARBON	10K	5%	1/4W	
R262	1-249-405-11	CARBON	100	5%	1/4W	
R263	1-215-878-00	METAL OXIDE	33K	5%	1W	F
R264	1-249-429-11	CARBON	10K	5%	1/4W	
R265	1-249-405-11	CARBON	100	5%	1/4W	
R266	1-249-441-11	CARBON	100K	5%	1/4W	
R267	1-215-379-00	METAL	18	1%	1/4W	
R268	1-215-379-00	METAL	18	1%	1/4W	
R269	1-215-421-00	METAL	1K	1%	1/4W	
R270	1-215-421-00	METAL	1K	1%	1/4W	
R271	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R272	1-249-453-11	CARBON	3.3	5%	1/4W	F
R273	1-249-429-11	CARBON	10K	5%	1/4W	
R274	1-249-429-11	CARBON	10K	5%	1/4W	
R275	1-249-429-11	CARBON	10K	5%	1/4W	
R276	1-249-429-11	CARBON	10K	5%	1/4W	
R281	1-249-451-11	CARBON	2.2	5%	1/4W	F
R282	1-249-451-11	CARBON	2.2	5%	1/4W	F
R283	1-249-425-11	CARBON	4.7K	5%	1/4W	
R284	1-215-467-00	METAL	82K	1%	1/4W	
R285	1-215-445-00	METAL	10K	1%	1/4W	
R286	1-215-911-11	METAL OXIDE	100	5%	3W	F
R287	1-202-846-00	SOLID	470K	10%	1/2W	
R288	1-202-846-00	SOLID	470K	10%	1/2W	
R289	1-202-846-00	SOLID	470K	10%	1/2W	
R290	1-202-846-00	SOLID	470K	10%	1/2W	
R296	1-249-429-11	CARBON	10K	5%	1/4W	

<VARIABLE RESISTOR>

RV104	1-228-997-00	RES, ADJ, CARBON 100K

<TRANSFORMER>

T2	⚠1-439-479-11	TRANSFORMER, LINE OUTPUT
T3	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE
T102	⚠1-439-480-11	TRANSFORMER, HORIZONTAL OUTPUT
T103	1-437-144-11	TRANSFORMER, FERRITE (HDT)
T104	1-437-144-11	TRANSFORMER, FERRITE (HDT)
T105	1-424-290-11	TRANSFORMER, DRIVE

****

*A-1345-961-A DC BOARD, COMPLETE
****

	*1-508-742-00	PIN, CONNECTOR 3P
	1-564-507-11	PLUG, CONNECTOR 4P
	*1-564-508-11	PLUG, CONNECTOR 5P
	*1-564-509-11	PLUG, CONNECTOR 6P
	*1-564-514-11	PLUG, CONNECTOR 11P
	*1-564-515-11	PLUG, CONNECTOR 12P
	*4-395-525-01	HOLDER (D), TR
	*4-395-527-01	HOLDER (B), TR
	4-874-042-00	SHEET, INSULATING

<CAPACITOR>

C1	1-124-514-11	ELECT	100MF	20%	50V
C2	1-126-101-11	ELECT	100MF	20%	16V
C3	1-124-122-11	ELECT	100MF	20%	50V
C4	1-126-101-11	ELECT	100MF	20%	16V
C5	1-124-122-11	ELECT	100MF	20%	50V
C6	1-102-963-00	CERAMIC	33PF	5%	50V
C7	1-102-963-00	CERAMIC	33PF	5%	50V
C8	1-136-157-00	FILM	0.022MF	5%	50V
C9	1-124-903-11	ELECT	1MF	20%	50V
C10	1-124-122-11	ELECT	100MF	20%	50V
C11	1-102-963-00	CERAMIC	33PF	5%	50V
C12	1-102-963-00	CERAMIC	33PF	5%	50V
C13	1-136-157-00	FILM	0.022MF	5%	50V
C14	1-124-903-11	ELECT	1MF	20%	50V
C15	1-124-122-11	ELECT	100MF	20%	50V
C16	1-102-963-00	CERAMIC	33PF	5%	50V
C17	1-102-963-00	CERAMIC	33PF	5%	50V
C18	1-136-157-00	FILM	0.022MF	5%	50V

DC

REF.NO.	PART NO.	DESCRIPTION			REMARK
C19	1-124-903-11	ELECT	1MF	20%	50V
C20	1-136-173-00	FILM	0.47MF	5%	50V
C21	1-124-556-11	ELECT	2200MF	20%	16V
C22	1-124-556-11	ELECT	2200MF	20%	16V
C23	1-124-556-11	ELECT	2200MF	20%	16V
C24	1-136-165-00	FILM	0.1MF	5%	50V
C25	1-136-165-00	FILM	0.1MF	5%	50V
C26	1-136-165-00	FILM	0.1MF	5%	50V
C27	1-136-165-00	FILM	0.1MF	5%	50V
C28	1-136-165-00	FILM	0.1MF	5%	50V
C29	1-136-165-00	FILM	0.1MF	5%	50V
C30	1-136-165-00	FILM	0.1MF	5%	50V
C31	1-136-165-00	FILM	0.1MF	5%	50V
C32	1-136-165-00	FILM	0.1MF	5%	50V
C33	1-124-477-11	ELECT	47MF	20%	16V
C34	1-124-903-11	ELECT	1MF	20%	50V
C35	1-124-360-00	ELECT	1000MF	20%	16V
C36	1-124-907-11	ELECT	10MF	20%	50V
C37	1-124-907-11	ELECT	10MF	20%	50V
C101	1-102-824-00	CERAMIC	470PF	5%	50V
C102	1-124-903-11	ELECT	1MF	20%	50V
C103	1-101-004-00	CERAMIC	0.01MF		50V
C104	1-124-122-11	ELECT	100MF	20%	50V
C105	1-124-922-11	ELECT	1000MF	20%	50V
C106	1-124-903-11	ELECT	1MF	20%	50V
C107	1-101-004-00	CERAMIC	0.01MF		50V
C108	1-124-122-11	ELECT	100MF	20%	50V
C109	1-124-922-11	ELECT	1000MF	20%	50V
C110	1-136-159-00	FILM	0.033MF	5%	50V
C111	1-136-159-00	FILM	0.033MF	5%	50V
C201	1-130-473-00	MYLAR	0.0015MF	5%	50V
C202	1-102-973-00	CERAMIC	100PF	5%	50V
C203	1-102-973-00	CERAMIC	100PF	5%	50V
C204	1-136-153-00	FILM	0.01MF	5%	50V
C205	1-124-477-11	ELECT	47MF	20%	16V
C206	1-124-122-11	ELECT	100MF	20%	50V
C207	1-101-004-00	CERAMIC	0.01MF		50V
C208	1-124-122-11	ELECT	100MF	20%	50V
C209	1-101-004-00	CERAMIC	0.01MF		50V
C210	1-130-473-00	MYLAR	0.0015MF	5%	50V
C211	1-102-973-00	CERAMIC	100PF	5%	50V
C212	1-102-973-00	CERAMIC	100PF	5%	50V
C213	1-136-153-00	FILM	0.01MF	5%	50V
C214	1-124-477-11	ELECT	47MF	20%	16V
C215	1-124-122-11	ELECT	100MF	20%	50V
C216	1-101-004-00	CERAMIC	0.01MF		50V
C217	1-124-122-11	ELECT	100MF	20%	50V
C218	1-101-004-00	CERAMIC	0.01MF		50V
C219	1-130-473-00	MYLAR	0.0015MF	5%	50V
C220	1-102-973-00	CERAMIC	100PF	5%	50V
C221	1-102-973-00	CERAMIC	100PF	5%	50V
C222	1-136-153-00	FILM	0.01MF	5%	50V
C223	1-124-477-11	ELECT	47MF	20%	16V
C224	1-124-122-11	ELECT	100MF	20%	50V
C225	1-101-004-00	CERAMIC	0.01MF		50V
C226	1-124-122-11	ELECT	100MF	20%	50V
C227	1-101-004-00	CERAMIC	0.01MF		50V
C228	1-124-907-11	ELECT	10MF	20%	50V
C229	1-101-004-00	CERAMIC	0.01MF		50V
C230	1-124-907-11	ELECT	10MF	20%	50V
C231	1-101-004-00	CERAMIC	0.01MF		50V
C232	1-124-907-11	ELECT	10MF	20%	50V
C233	1-101-004-00	CERAMIC	0.01MF		50V
C234	1-124-907-11	ELECT	10MF	20%	50V
C235	1-101-004-00	CERAMIC	0.01MF		50V
C236	1-124-907-11	ELECT	10MF	20%	50V
C237	1-101-004-00	CERAMIC	0.01MF		50V
C238	1-124-907-11	ELECT	10MF	20%	50V
C239	1-101-004-00	CERAMIC	0.01MF		50V
C243	1-102-978-00	CERAMIC	220PF	5%	50V
C244	1-102-978-00	CERAMIC	220PF	5%	50V
C245	1-102-978-00	CERAMIC	220PF	5%	50V
C246	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C247	1-130-471-00	MYLAR	0.001MF	5%	50V
C248	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C249	1-130-471-00	MYLAR	0.001MF	5%	50V
C250	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C251	1-130-471-00	MYLAR	0.001MF	5%	50V
C301	1-130-473-00	MYLAR	0.0015MF	5%	50V
C302	1-102-973-00	CERAMIC	100PF	5%	50V
C303	1-102-973-00	CERAMIC	100PF	5%	50V
C304	1-136-153-00	FILM	0.01MF	5%	50V
C305	1-124-477-11	ELECT	47MF	20%	16V
C306	1-124-122-11	ELECT	100MF	20%	50V
C307	1-101-004-00	CERAMIC	0.01MF		50V
C308	1-124-122-11	ELECT	100MF	20%	50V
C309	1-101-004-00	CERAMIC	0.01MF		50V
C310	1-130-473-00	MYLAR	0.0015MF	5%	50V
C311	1-102-973-00	CERAMIC	100PF	5%	50V
C312	1-102-973-00	CERAMIC	100PF	5%	50V
C313	1-136-153-00	FILM	0.01MF	5%	50V
C314	1-124-477-11	ELECT	47MF	20%	16V
C315	1-124-122-11	ELECT	100MF	20%	50V
C316	1-101-004-00	CERAMIC	0.01MF		50V
C317	1-124-122-11	ELECT	100MF	20%	50V
C318	1-101-004-00	CERAMIC	0.01MF		50V
C319	1-130-473-00	MYLAR	0.0015MF	5%	50V
C320	1-102-973-00	CERAMIC	100PF	5%	50V
C321	1-102-973-00	CERAMIC	100PF	5%	50V
C322	1-136-153-00	FILM	0.01MF	5%	50V
C323	1-124-477-11	ELECT	47MF	20%	16V
C324	1-124-477-11	ELECT	47MF	20%	16V
C325	1-101-004-00	CERAMIC	0.01MF		50V
C326	1-124-477-11	ELECT	47MF	20%	16V
C327	1-101-004-00	CERAMIC	0.01MF		50V
C328	1-124-907-11	ELECT	10MF	20%	50V
C329	1-101-004-00	CERAMIC	0.01MF		50V
C330	1-124-907-11	ELECT	10MF	20%	50V
C331	1-101-004-00	CERAMIC	0.01MF		50V
C332	1-124-907-11	ELECT	10MF	20%	50V
C333	1-101-004-00	CERAMIC	0.01MF		50V
C334	1-124-907-11	ELECT	10MF	20%	50V
C335	1-101-004-00	CERAMIC	0.01MF		50V
C336	1-124-907-11	ELECT	10MF	20%	50V
C337	1-101-004-00	CERAMIC	0.01MF		50V
C338	1-124-907-11	ELECT	10MF	20%	50V
C339	1-101-004-00	CERAMIC	0.01MF		50V
C343	1-102-824-00	CERAMIC	470PF	5%	50V
C344	1-102-824-00	CERAMIC	470PF	5%	50V
C345	1-102-824-00	CERAMIC	470PF	5%	50V
C346	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C347	1-130-471-00	MYLAR	0.001MF	5%	50V
C348	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C349	1-130-471-00	MYLAR	0.001MF	5%	50V
C350	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C351	1-130-471-00	MYLAR	0.001MF	5%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-900-95	DIODE V09G	
D2	8-719-900-95	DIODE V09G	
D3	8-719-900-95	DIODE V09G	
D4	8-719-911-19	DIODE 1SS119	
D5	8-719-900-95	DIODE V09G	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-900-95	DIODE V09G	
D8	8-719-911-19	DIODE 1SS119	
D9	8-719-911-19	DIODE 1SS119	
D10	8-719-911-19	DIODE 1SS119	
D11	8-719-911-19	DIODE 1SS119	
D12	8-719-911-19	DIODE 1SS119	
D13	8-719-911-19	DIODE 1SS119	
D14	8-719-911-19	DIODE 1SS119	
D15	8-719-911-19	DIODE 1SS119	
D16	8-719-911-19	DIODE 1SS119	
D101	8-719-911-19	DIODE 1SS119	
D102	8-719-908-20	DIODE ERC88-009	
D103	8-719-908-20	DIODE ERC88-009	
D104	8-719-911-19	DIODE 1SS119	
D105	8-719-908-20	DIODE ERC88-009	
D106	8-719-908-20	DIODE ERC88-009	
D201	8-719-110-41	DIODE RD15ESB2	
D202	8-719-109-66	DIODE RD3.3ESB2	
D203	8-719-911-19	DIODE 1SS119	
D204	8-719-911-19	DIODE 1SS119	
D205	8-719-110-41	DIODE RD15ESB2	
D206	8-719-109-66	DIODE RD3.3ESB2	
D207	8-719-911-19	DIODE 1SS119	
D208	8-719-911-19	DIODE 1SS119	
D209	8-719-110-41	DIODE RD15ESB2	
D210	8-719-109-66	DIODE RD3.3ESB2	
D211	8-719-911-19	DIODE 1SS119	
D212	8-719-911-19	DIODE 1SS119	
D301	8-719-110-41	DIODE RD15ESB2	
D302	8-719-109-66	DIODE RD3.3ESB2	
D303	8-719-911-19	DIODE 1SS119	
D304	8-719-911-19	DIODE 1SS119	
D305	8-719-110-41	DIODE RD15ESB2	
D306	8-719-109-66	DIODE RD3.3ESB2	
D307	8-719-911-19	DIODE 1SS119	
D308	8-719-911-19	DIODE 1SS119	
D309	8-719-110-41	DIODE RD15ESB2	
D310	8-719-109-66	DIODE RD3.3ESB2	
D311	8-719-911-19	DIODE 1SS119	
D312	8-719-911-19	DIODE 1SS119	

<FERRITE BEAD>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB1	1-410-396-41	FERRITE BEAD INDUCTOR	
FB2	1-410-396-41	FERRITE BEAD INDUCTOR	
FB3	1-410-396-41	FERRITE BEAD INDUCTOR	
FB4	1-410-396-41	FERRITE BEAD INDUCTOR	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-982-13	IC RC7812FA	
IC2	8-759-929-65	IC LM7912CT	
IC3	8-759-145-58	IC UPC4558C	
IC4	8-759-113-13	IC UPC1498H	
IC5	8-759-145-58	IC UPC4558C	
IC6	8-759-113-13	IC UPC1498H	
IC7	8-759-145-58	IC UPC4558C	
IC8	8-759-113-13	IC UPC1498H	
IC9	8-759-145-58	IC UPC4558C	
IC101	8-759-109-82	IC UPC814C	
IC102	8-759-109-82	IC UPC814C	
IC103	8-759-109-82	IC UPC814C	
IC201	8-759-973-02	IC LM6364N	
IC202	8-759-973-02	IC LM6364N	
IC203	8-759-973-02	IC LM6364N	
IC301	8-759-973-02	IC LM6364N	
IC302	8-759-973-02	IC LM6364N	
IC303	8-759-973-02	IC LM6364N	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L101	1-459-155-00	COIL (WITH CORE) 45UH	
L102	1-459-155-00	COIL (WITH CORE) 45UH	
L103	1-459-155-00	COIL (WITH CORE) 45UH	
L104	1-459-155-00	COIL (WITH CORE) 45UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-900-89	TRANSISTOR DTC144ES	
Q5	8-729-900-89	TRANSISTOR DTC144ES	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-900-89	TRANSISTOR DTC144ES	
Q8	8-729-900-89	TRANSISTOR DTC144ES	
Q9	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q10	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q11	8-729-900-89	TRANSISTOR DTC144ES	
Q12	8-729-900-89	TRANSISTOR DTC144ES	
Q13	8-729-900-89	TRANSISTOR DTC144ES	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-105-72	TRANSISTOR 2SK523-L1	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q105	8-729-142-68	TRANSISTOR 2SJ143	
Q106	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q107	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q108	8-729-142-69	TRANSISTOR 2SK817	
Q201	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q202	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q203	8-729-142-74	TRANSISTOR 2SD1977	
Q204	8-729-142-70	TRANSISTOR 2SB1315	
Q205	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q206	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q207	8-729-142-74	TRANSISTOR 2SD1977	
Q208	8-729-142-70	TRANSISTOR 2SB1315	
Q209	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q210	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q211	8-729-142-74	TRANSISTOR 2SD1977	
Q212	8-729-142-70	TRANSISTOR 2SB1315	
Q301	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q302	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q303	8-729-142-74	TRANSISTOR 2SD1977	
Q304	8-729-142-70	TRANSISTOR 2SB1315	
Q305	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q306	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q307	8-729-142-74	TRANSISTOR 2SD1977	
Q308	8-729-142-70	TRANSISTOR 2SB1315	

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q309	8-729-207-89	TRANSISTOR 2SA1358-Y				
Q310	8-729-207-82	TRANSISTOR 2SC3421-Y				
Q311	8-729-142-74	TRANSISTOR 2SD1977				
Q312	8-729-142-70	TRANSISTOR 2SB1315				

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-215-463-00	METAL	56K	1%	1/4W	
R2	1-215-445-00	METAL	10K	1%	1/4W	
R3	1-215-445-00	METAL	10K	1%	1/4W	
R4	1-214-800-11	METAL	2.2	1%	1/2W	
R5	1-214-800-11	METAL	2.2	1%	1/2W	
R6	1-215-429-00	METAL	2.2K	1%	1/4W	
R7	1-215-421-00	METAL	1K	1%	1/4W	
R8	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R9	1-249-433-11	CARBON	22K	5%	1/4W	
R10	1-249-417-11	CARBON	1K	5%	1/4W	
R11	1-249-441-11	CARBON	100K	5%	1/4W	
R12	1-249-429-11	CARBON	10K	5%	1/4W	
R13	1-249-429-11	CARBON	10K	5%	1/4W	
R14	1-249-429-11	CARBON	10K	5%	1/4W	
R15	1-215-463-00	METAL	56K	1%	1/4W	
R16	1-215-445-00	METAL	10K	1%	1/4W	
R17	1-215-445-00	METAL	10K	1%	1/4W	
R18	1-214-800-11	METAL	2.2	1%	1/2W	
R19	1-214-800-11	METAL	2.2	1%	1/2W	
R20	1-215-429-00	METAL	2.2K	1%	1/4W	
R21	1-215-421-00	METAL	1K	1%	1/4W	
R22	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R23	1-249-433-11	CARBON	22K	5%	1/4W	
R24	1-249-417-11	CARBON	1K	5%	1/4W	
R25	1-249-441-11	CARBON	100K	5%	1/4W	
R26	1-249-429-11	CARBON	10K	5%	1/4W	
R27	1-249-429-11	CARBON	10K	5%	1/4W	
R28	1-249-429-11	CARBON	10K	5%	1/4W	
R29	1-215-463-00	METAL	56K	1%	1/4W	
R30	1-215-445-00	METAL	10K	1%	1/4W	
R31	1-215-445-00	METAL	10K	1%	1/4W	
R32	1-214-800-11	METAL	2.2	1%	1/2W	
R33	1-214-800-11	METAL	2.2	1%	1/2W	
R34	1-215-429-00	METAL	2.2K	1%	1/4W	
R35	1-215-421-00	METAL	1K	1%	1/4W	
R36	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R37	1-249-433-11	CARBON	22K	5%	1/4W	
R38	1-249-417-11	CARBON	1K	5%	1/4W	
R39	1-249-441-11	CARBON	100K	5%	1/4W	
R40	1-249-429-11	CARBON	10K	5%	1/4W	
R41	1-249-429-11	CARBON	10K	5%	1/4W	
R42	1-249-429-11	CARBON	10K	5%	1/4W	
R43	1-249-429-11	CARBON	10K	5%	1/4W	
R44	1-249-429-11	CARBON	10K	5%	1/4W	
R45	1-249-417-11	CARBON	1K	5%	1/4W	
R46	1-249-433-11	CARBON	22K	5%	1/4W	
R47	1-249-433-11	CARBON	22K	5%	1/4W	
R48	1-249-429-11	CARBON	10K	5%	1/4W	
R49	1-249-429-11	CARBON	10K	5%	1/4W	
R50	1-249-437-11	CARBON	47K	5%	1/4W	
R51	1-249-417-11	CARBON	1K	5%	1/4W	
R52	1-249-417-11	CARBON	1K	5%	1/4W	
R53	1-249-437-11	CARBON	47K	5%	1/4W	
R54	1-249-417-11	CARBON	1K	5%	1/4W	
R55	1-215-883-11	METAL OXIDE	33	5%	2W	F
R56	1-249-433-11	CARBON	22K	5%	1/4W	
R57	1-249-429-11	CARBON	10K	5%	1/4W	
R58	1-249-417-11	CARBON	1K	5%	1/4W	
R59	1-215-883-11	METAL OXIDE	33	5%	2W	F
R60	1-215-883-11	METAL OXIDE	33	5%	2W	F
R61	1-215-463-00	METAL	56K	1%	1/4W	
R62	1-215-463-00	METAL	56K	1%	1/4W	
R63	1-215-463-00	METAL	56K	1%	1/4W	
R64	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R65	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R66	1-249-425-11	CARBON	4.7K	5%	1/4W	
R67	1-249-429-11	CARBON	10K	5%	1/4W	
R68	1-249-433-11	CARBON	22K	5%	1/4W	
R69	1-249-429-11	CARBON	10K	5%	1/4W	
R70	1-249-429-11	CARBON	10K	5%	1/4W	
R71	1-249-433-11	CARBON	22K	5%	1/4W	
R73	1-249-441-11	CARBON	100K	5%	1/4W	
R74	1-249-425-11	CARBON	4.7K	5%	1/4W	
R75	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R76	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R77	1-249-417-11	CARBON	1K	5%	1/4W	
R78	1-249-417-11	CARBON	1K	5%	1/4W	
R79	1-249-429-11	CARBON	10K	5%	1/4W	
R80	1-249-429-11	CARBON	10K	5%	1/4W	
R81	1-249-429-11	CARBON	10K	5%	1/4W	
R82	1-249-429-11	CARBON	10K	5%	1/4W	
R101	1-249-417-11	CARBON	1K	5%	1/4W	
R102	1-249-417-11	CARBON	1K	5%	1/4W	
R103	1-249-419-11	CARBON	1.5K	5%	1/4W	
R104	1-249-429-11	CARBON	10K	5%	1/4W	
R105	1-249-425-11	CARBON	4.7K	5%	1/4W	
R106	1-249-417-11	CARBON	1K	5%	1/4W	
R107	1-249-393-11	CARBON	10	5%	1/4W	F
R108	1-249-393-11	CARBON	10	5%	1/4W	F
R109	1-249-405-11	CARBON	100	5%	1/4W	
R110	1-249-393-11	CARBON	10	5%	1/4W	
R111	1-249-417-11	CARBON	1K	5%	1/4W	
R112	1-249-393-11	CARBON	10	5%	1/4W	F
R113	1-249-393-11	CARBON	10	5%	1/4W	F
R114	1-249-405-11	CARBON	100	5%	1/4W	
R115	1-249-393-11	CARBON	10	5%	1/4W	
R201	1-215-425-00	METAL	1.5K	1%	1/4W	
R202	1-215-445-00	METAL	10K	1%	1/4W	
R203	1-215-421-00	METAL	1K	1%	1/4W	
R204	1-215-417-00	METAL	680	1%	1/4W	
R205	1-215-435-00	METAL	3.9K	1%	1/4W	
R206	1-215-421-00	METAL	1K	1%	1/4W	
R207	1-215-421-00	METAL	1K	1%	1/4W	
R208	1-214-814-11	METAL	8.2	1%	1/2W	
R209	1-214-814-11	METAL	8.2	1%	1/2W	
R210	1-214-814-11	METAL	8.2	1%	1/2W	
R211	1-214-814-11	METAL	8.2	1%	1/2W	
R212	1-214-814-11	METAL	8.2	1%	1/2W	
R213	1-214-814-11	METAL	8.2	1%	1/2W	
R214	1-249-435-11	CARBON	33K	5%	1/4W	
R215	1-249-426-11	CARBON	5.6K	5%	1/4W	
R216	1-249-415-11	CARBON	680	5%	1/4W	F
R217	1-249-427-11	CARBON	6.8K	5%	1/4W	
R218	1-249-407-11	CARBON	150	5%	1/4W	
R219	1-249-403-11	CARBON	68	5%	1/4W	F
R221	1-216-369-00	METAL OXIDE	1	5%	2W	F
R222	1-216-369-00	METAL OXIDE	1	5%	2W	F
R223	1-215-888-00	METAL OXIDE	220	5%	2W	F
R224	1-215-425-00	METAL	1.5K	1%	1/4W	
R225	1-215-445-00	METAL	10K	1%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R226	1-215-421-00	METAL	1K	1%	1/4W	
R227	1-215-417-00	METAL	680	1%	1/4W	
R228	1-215-435-00	METAL	3.9K	1%	1/4W	
R229	1-215-421-00	METAL	1K	1%	1/4W	
R230	1-215-421-00	METAL	1K	1%	1/4W	
R231	1-214-814-11	METAL	8.2	1%	1/2W	
R232	1-214-814-11	METAL	8.2	1%	1/2W	
R233	1-214-814-11	METAL	8.2	1%	1/2W	
R234	1-214-814-11	METAL	8.2	1%	1/2W	
R235	1-214-814-11	METAL	8.2	1%	1/2W	
R236	1-214-814-11	METAL	8.2	1%	1/2W	
R237	1-249-435-11	CARBON	33K	5%	1/4W	
R238	1-249-426-11	CARBON	5.6K	5%	1/4W	
R239	1-249-415-11	CARBON	680	5%	1/4W	F
R240	1-249-427-11	CARBON	6.8K	5%	1/4W	
R241	1-249-407-11	CARBON	150	5%	1/4W	
R242	1-249-403-11	CARBON	68	5%	1/4W	F
R244	1-216-369-00	METAL OXIDE	1	5%	2W	F
R245	1-216-369-00	METAL OXIDE	1	5%	2W	F
R246	1-215-888-00	METAL OXIDE	220	5%	2W	F
R247	1-215-425-00	METAL	1.5K	1%	1/4W	
R248	1-215-445-00	METAL	10K	1%	1/4W	
R249	1-215-421-00	METAL	1K	1%	1/4W	
R250	1-215-417-00	METAL	680	1%	1/4W	
R251	1-215-435-00	METAL	3.9K	1%	1/4W	
R252	1-215-421-00	METAL	1K	1%	1/4W	
R253	1-215-421-00	METAL	1K	1%	1/4W	
R254	1-214-814-11	METAL	8.2	1%	1/2W	
R255	1-214-814-11	METAL	8.2	1%	1/2W	
R256	1-214-814-11	METAL	8.2	1%	1/2W	
R257	1-214-814-11	METAL	8.2	1%	1/2W	
R258	1-214-814-11	METAL	8.2	1%	1/2W	
R259	1-214-814-11	METAL	8.2	1%	1/2W	
R260	1-249-435-11	CARBON	33K	5%	1/4W	
R261	1-249-426-11	CARBON	5.6K	5%	1/4W	
R262	1-249-415-11	CARBON	680	5%	1/4W	F
R263	1-249-427-11	CARBON	6.8K	5%	1/4W	
R264	1-249-407-11	CARBON	150	5%	1/4W	
R265	1-249-403-11	CARBON	68	5%	1/4W	F
R267	1-216-369-00	METAL OXIDE	1	5%	2W	F
R268	1-216-369-00	METAL OXIDE	1	5%	2W	F
R269	1-215-888-00	METAL OXIDE	220	5%	2W	F
R270	1-249-405-11	CARBON	100	5%	1/4W	
R271	1-249-405-11	CARBON	100	5%	1/4W	
R272	1-249-405-11	CARBON	100	5%	1/4W	
R273	1-249-405-11	CARBON	100	5%	1/4W	
R274	1-249-405-11	CARBON	100	5%	1/4W	
R275	1-249-405-11	CARBON	100	5%	1/4W	
R301	1-215-427-00	METAL	1.8K	1%	1/4W	
R302	1-215-445-00	METAL	10K	1%	1/4W	
R303	1-215-421-00	METAL	1K	1%	1/4W	
R304	1-215-411-00	METAL	390	1%	1/4W	
R305	1-215-429-00	METAL	2.2K	1%	1/4W	
R306	1-215-421-00	METAL	1K	1%	1/4W	
R307	1-215-421-00	METAL	1K	1%	1/4W	
R308	1-214-808-11	METAL	4.7	1%	1/2W	
R309	1-214-808-11	METAL	4.7	1%	1/2W	
R310	1-214-808-11	METAL	4.7	1%	1/2W	
R311	1-214-808-11	METAL	4.7	1%	1/2W	
R312	1-214-808-11	METAL	4.7	1%	1/2W	
R313	1-214-808-11	METAL	4.7	1%	1/2W	
R314	1-249-435-11	CARBON	33K	5%	1/4W	
R315	1-249-426-11	CARBON	5.6K	5%	1/4W	
R316	1-249-415-11	CARBON	680	5%	1/4W	F
R317	1-249-427-11	CARBON	6.8K	5%	1/4W	
R318	1-249-407-11	CARBON	150	5%	1/4W	
R319	1-249-403-11	CARBON	68	5%	1/4W	F
R321	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R322	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R323	1-215-888-00	METAL OXIDE	220	5%	2W	F
R324	1-215-427-00	METAL	1.8K	1%	1/4W	
R325	1-215-445-00	METAL	10K	1%	1/4W	
R326	1-215-421-00	METAL	1K	1%	1/4W	
R327	1-215-411-00	METAL	390	1%	1/4W	
R328	1-215-429-00	METAL	2.2K	1%	1/4W	
R329	1-215-421-00	METAL	1K	1%	1/4W	
R330	1-215-421-00	METAL	1K	1%	1/4W	
R331	1-214-808-11	METAL	4.7	1%	1/2W	
R332	1-214-808-11	METAL	4.7	1%	1/2W	
R333	1-214-808-11	METAL	4.7	1%	1/2W	
R334	1-214-808-11	METAL	4.7	1%	1/2W	
R335	1-214-808-11	METAL	4.7	1%	1/2W	
R336	1-214-808-11	METAL	4.7	1%	1/2W	
R337	1-249-435-11	CARBON	33K	5%	1/4W	
R338	1-249-426-11	CARBON	5.6K	5%	1/4W	
R339	1-249-415-11	CARBON	680	5%	1/4W	F
R340	1-249-427-11	CARBON	6.8K	5%	1/4W	
R341	1-249-407-11	CARBON	150	5%	1/4W	
R342	1-249-403-11	CARBON	68	5%	1/4W	F
R344	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R345	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R346	1-215-888-00	METAL OXIDE	220	5%	2W	F
R347	1-215-427-00	METAL	1.8K	1%	1/4W	
R348	1-215-445-00	METAL	10K	1%	1/4W	
R349	1-215-421-00	METAL	1K	1%	1/4W	
R350	1-215-411-00	METAL	390	1%	1/4W	
R351	1-215-429-00	METAL	2.2K	1%	1/4W	
R352	1-215-421-00	METAL	1K	1%	1/4W	
R353	1-215-421-00	METAL	1K	1%	1/4W	
R354	1-214-808-11	METAL	4.7	1%	1/2W	
R355	1-214-808-11	METAL	4.7	1%	1/2W	
R356	1-214-808-11	METAL	4.7	1%	1/2W	
R357	1-214-808-11	METAL	4.7	1%	1/2W	
R358	1-214-808-11	METAL	4.7	1%	1/2W	
R359	1-214-808-11	METAL	4.7	1%	1/2W	
R360	1-249-435-11	CARBON	33K	5%	1/4W	
R361	1-249-426-11	CARBON	5.6K	5%	1/4W	
R362	1-249-415-11	CARBON	680	5%	1/4W	F
R363	1-249-427-11	CARBON	6.8K	5%	1/4W	
R364	1-249-404-00	CARBON	82	5%	1/4W	
R365	1-249-400-11	CARBON	39	5%	1/4W	F
R367	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R368	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R369	1-215-888-00	METAL OXIDE	220	5%	2W	F
R370	1-249-405-11	CARBON	100	5%	1/4W	
R371	1-249-405-11	CARBON	100	5%	1/4W	
R372	1-249-405-11	CARBON	100	5%	1/4W	
R373	1-249-405-11	CARBON	100	5%	1/4W	
R374	1-249-405-11	CARBON	100	5%	1/4W	
R375	1-249-405-11	CARBON	100	5%	1/4W	

****

*A-1380-289-A K BOARD, COMPLETE
****

PART NO.	DESCRIPTION
*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
*1-564-506-11	PLUG, CONNECTOR 3P
*1-564-523-11	PLUG, CONNECTOR 8P

K **LA**

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<CAPACITOR>				
C201	1-124-907-11	ELECT	10MF	20%	50V	
C202	1-124-907-11	ELECT	10MF	20%	50V	
C203	1-101-004-00	CERAMIC	0.01MF		50V	
C204	1-101-004-00	CERAMIC	0.01MF		50V	
C205	1-101-004-00	CERAMIC	0.01MF		50V	
C206	1-101-004-00	CERAMIC	0.01MF		50V	
C207	1-124-927-11	ELECT	4.7MF	20%	50V	
C208	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C209	1-124-903-11	ELECT	1MF	20%	50V	
C210	1-136-165-00	FILM	0.1MF	5%	50V	
C237	1-101-002-00	CERAMIC	0.0022MF		50V	
		<DIODE>				
D201	8-719-110-17	DIODE RD10ESB2				
D202	8-719-110-17	DIODE RD10ESB2				
		<IC>				
IC201	8-759-109-82	IC UPC814C				
IC202	8-759-103-92	IC UPC318C				
		<TRANSISTOR>				
Q201	8-729-313-82	TRANSISTOR 2SD1138-C				
Q202	8-729-386-12	TRANSISTOR 2SB861-C				
Q203	8-729-143-42	TRANSISTOR 2SK929				
Q204	8-729-143-42	TRANSISTOR 2SK929				
		<RESISTOR>				
R201	1-249-435-11	CARBON	33K	5%	1/4W	
R202	1-249-421-11	CARBON	2.2K	5%	1/4W	
R203	1-249-437-11	CARBON	47K	5%	1/4W	
R204	1-249-405-11	CARBON	100	5%	1/4W	
R205	1-249-431-11	CARBON	15K	5%	1/4W	
R206	1-249-425-11	CARBON	4.7K	5%	1/4W	
R207	1-247-700-11	CARBON	100	5%	1/4W	F
R209	1-202-818-00	SOLID	1K	10%	1/2W	
R210	1-249-433-11	CARBON	22K	5%	1/4W	
R212	1-249-429-11	CARBON	10K	5%	1/4W	
R213	1-249-441-11	CARBON	100K	5%	1/4W	
R214	1-215-491-00	METAL	820K	1%	1/4W	
R215	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R216	1-215-419-00	METAL	820	1%	1/4W	
R217	1-249-425-11	CARBON	4.7K	5%	1/4W	
R218	1-249-429-11	CARBON	10K	5%	1/4W	
R219	1-247-713-11	CARBON	1K	5%	1/4W	F
R220	1-247-700-11	CARBON	100	5%	1/4W	F
R221	1-202-842-11	SOLID	220K	10%	1/2W	
R222	1-247-713-11	CARBON	1K	5%	1/4W	F
R223	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R224	1-202-842-11	SOLID	220K	10%	1/2W	
R225	1-247-713-11	CARBON	1K	5%	1/4W	F
R226	1-249-451-11	CARBON	2.2	5%	1/4W	F
R227	1-249-451-11	CARBON	2.2	5%	1/4W	F
R239	1-202-818-00	SOLID	1K	10%	1/2W	
		<SPARK GAP>				

REF.NO.	PART NO.	DESCRIPTION	REMARK
SG201	1-519-063-XX	DISCHARGING GAP	
SG202	1-519-063-XX	DISCHARGING GAP	
		<TRANSFORMER>	
T201	1-424-287-11	TRANSFORMER, DYNAMIC FOCUS	

****

	*A-1390-207-A	LA BOARD, COMPLETE ******************				
	*1-564-519-11	PLUG, CONNECTOR 4P				
	*1-564-526-11	PLUG, CONNECTOR 11P				
	4-334-240-00	HOLDER, LED				
		<CAPACITOR>				
C1	1-101-004-00	CERAMIC	0.01MF		50V	
C2	1-101-004-00	CERAMIC	0.01MF		50V	
C3	1-101-004-00	CERAMIC	0.01MF		50V	
C4	1-124-477-11	ELECT	47MF	20%	16V	
C5	1-124-477-11	ELECT	47MF	20%	16V	
C6	1-101-004-00	CERAMIC	0.01MF		50V	
C7	1-124-477-11	ELECT	47MF	20%	16V	
		<DIODE>				
D1	8-719-920-66	DIODE SLR-54VC12				
D2	8-719-955-04	DIODE PY5504S-1				
		<IC>				
IC1	8-759-233-33	IC TC74HC541AP				
IC2	8-759-044-95	IC MC14495P1				
IC3	8-759-044-95	IC MC14495P1				
IC4	8-759-107-33	IC UPC1060C				
IC5	8-719-901-68	DIODE GL-6R202				
		<COIL>				
L1	1-410-671-31	INDUCTOR	47UH			
		<TRANSISTOR>				
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		<RESISTOR>				
R1	1-249-441-11	CARBON	100K	5%	1/4W	
R2	1-249-441-11	CARBON	100K	5%	1/4W	
R3	1-215-429-00	METAL	2.2K	1%	1/4W	
R4	1-215-477-00	METAL	220K	1%	1/4W	
R5	1-215-477-00	METAL	220K	1%	1/4W	
R6	1-215-405-00	METAL	220	1%	1/4W	
R7	1-215-387-00	METAL	39	1%	1/4W	
R8	1-249-433-11	CARBON	22K	5%	1/4W	
R9	1-249-429-11	CARBON	10K	5%	1/4W	
R10	1-249-409-11	CARBON	220	5%	1/4W	
R11	1-249-409-11	CARBON	220	5%	1/4W	
R12	1-249-405-11	CARBON	100	5%	1/4W	

<TIMER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
TM1	1-548-119-21	CLOCK	
	1-533-190-11	CLIP, FUSE; TM1	
TM2	1-548-119-21	CLOCK	
	1-533-190-11	CLIP, FUSE; TM2	
TM3	1-548-119-21	CLOCK	
	1-533-190-11	CLIP, FUSE; TM3	

****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-640-416-11	LB BOARD ********	
	*1-508-742-00	PIN, CONNECTOR 3P	
	*1-564-506-11	PLUG, CONNECTOR 3P	

****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1394-300-A	Y BOARD, COMPLETE *****************	
	*1-526-659-00	SOCKET, IC (DP) 28P	
	*1-526-950-11	SOCKET, IC 64P	
	*1-563-949-11	SOCKET, SIL 8P; IC20	
	*1-568-984-11	CONNECTOR, MALE 96P	
	1-570-204-21	SWITCH, KEY BOARD	
	1-570-598-11	SWITCH, DIP	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK	
C1	1-124-927-11	ELECT	4.7MF	20%	50V
C2	1-124-927-11	ELECT	4.7MF	20%	50V
C3	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C4	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C5	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C6	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C7	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C8	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C9	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C10	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C11	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C12	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C13	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C14	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C15	1-163-833-00	CERAMIC CHIP	0.068MF	10%	25V
C16	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C17	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C18	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C19	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C20	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C21	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C22	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C23	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C24	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C25	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C26	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C27	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C28	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C29	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C30	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C31	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C32	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C33	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C34	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C35	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C36	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C37	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C38	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C39	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C40	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C41	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C42	1-124-477-11	ELECT	47MF	20%	16V
C43	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C44	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C45	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C46	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C47	1-124-119-00	ELECT	330MF	20%	16V
C48	1-124-477-11	ELECT	47MF	20%	16V
C49	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C50	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C51	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C52	1-126-103-11	ELECT	470MF	20%	16V
C53	1-126-101-11	ELECT	100MF	20%	16V
C54	1-126-101-11	ELECT	100MF	20%	16V
C55	1-126-101-11	ELECT	100MF	20%	16V
C56	1-126-101-11	ELECT	100MF	20%	16V
C57	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C58	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C59	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C60	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C61	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C62	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C63	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C64	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C65	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C66	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C67	1-124-119-00	ELECT	330MF	20%	16V
C68	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C69	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C70	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C71	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C72	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C73	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C74	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C75	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C76	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C77	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-971-20	DIODE ERC38-06	
D2	8-719-971-20	DIODE ERC38-06	
D3	8-719-104-34	DIODE 1S2836	
D4	8-719-800-60	DIODE TLR214	
D5	8-719-104-34	DIODE 1S2836	
D7	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-320-49	IC HD64180R1P8	
IC2	8-759-748-29	IC MBM27C512-20	
IC3	8-752-331-00	IC CXK5864BM-12L	
IC4	8-759-720-67	IC X28C64PI	
IC5	8-759-925-80	IC SN74HC14ANS	
IC6	8-759-206-28	IC TC74HC123F	
IC7	8-759-008-21	IC MC74HC541F	
IC8	8-759-008-21	IC MC74HC541F	
IC9	8-759-995-97	IC MB8855-1314N	

Y

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC10	8-759-984-56	IC MB670840PF	
IC11	8-759-984-59	IC MB654842UPF	
IC12	8-759-984-58	IC MB671469PF	
IC13	8-759-984-57	IC MB605195	
IC14	8-752-322-10	IC CXK5814P-45L	
IC15	8-752-333-84	IC CXK3864-040M	
IC16	8-752-333-85	IC CXK3864-041M	
IC17	8-752-333-86	IC CXK3864-042M	
IC18	8-759-301-24	IC HD10124	
IC19	8-759-301-24	IC HD10124	
IC21	8-759-911-24	IC SN74S124N	
IC22	8-759-100-93	IC UPC393G2	
IC23	8-759-031-50	IC MC74F00M	
IC24	8-759-008-57	IC MC34051P	
IC25	8-759-114-06	IC UPC814G2-1	
IC26	8-759-032-01	IC MC74HC00AF	
IC27	8-759-925-98	IC SN74HC107ANS	
IC28	8-759-032-01	IC MC74HC00AF	
IC29	8-759-206-28	IC TC74HC123F	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-459-155-00	COIL (WITH CORE) 45UH	
L2	1-459-155-00	COIL (WITH CORE) 45UH	
L3	1-459-155-00	COIL (WITH CORE) 45UH	
L4	1-459-155-00	COIL (WITH CORE) 45UH	

<IC LINK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
PS1	⚠1-532-679-91	LINK, IC	
PS2	⚠1-532-679-91	LINK, IC	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q3	8-729-216-22	TRANSISTOR 2SA1162-G	
Q4	8-729-216-22	TRANSISTOR 2SA1162-G	
Q5	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q7	8-729-230-49	TRANSISTOR 2SC2712-YG	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R2	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R3	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R4	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R5	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R6	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R7	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R9	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R10	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R11	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R12	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R13	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R14	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R15	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R17	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R18	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R19	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R20	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R21	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R22	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R23	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R24	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R25	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R26	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R27	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R28	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R29	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R30	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R31	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R32	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R33	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R34	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R36	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R37	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R38	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R39	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R40	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R41	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R42	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R43	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R44	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R45	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R46	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R47	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R48	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R49	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R50	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R51	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R52	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R53	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R54	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R55	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R56	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R57	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R58	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R59	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R60	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R61	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R62	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R63	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R64	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R65	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R66	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R67	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R68	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R69	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R70	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R71	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R72	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R73	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R74	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R75	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R76	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R77	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R78	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R79	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R80	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R81	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R82	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R83	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R84	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R85	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R86	1-216-045-00	METAL GLAZE	680	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R87	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R88	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R89	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R90	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R91	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R92	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R93	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R94	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R95	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R96	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R97	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R98	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R99	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R100	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R103	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R104	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R105	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R106	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R107	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R110	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R111	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R112	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R113	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R114	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R115	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R125	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R127	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R129	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R130	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R131	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R132	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R133	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R134	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R135	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R136	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R137	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R138	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R139	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R140	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R141	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R142	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R143	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R144	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R145	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R146	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R147	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R148	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R149	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R150	1-216-105-00	METAL GLAZE	220K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R151	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R152	1-216-025-00	METAL GLAZE	100	5%	1/10W	

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION
X1	1-578-687-11	VIBRATOR, CRYSTAL
X2	1-577-116-21	VIBRATOR, CRYSTAL
X3	1-567-192-11	OSCILLATOR, CERAMIC
X4	1-577-353-11	VIBRATOR, CERAMIC

****

*A-1394-301-A Z BOARD, COMPLETE

****

PART NO.	DESCRIPTION
*1-526-659-00	SOCKET, IC (DP) 28P
*1-540-212-11	SOCKET (ROTARY SWITCH)
*1-568-981-11	CONNECTOR, MALE 64P
4-032-851-01	HANDLE
4-033-135-01	PANEL, INDEX
4-033-136-01	FILTER, INDEX
4-382-854-11	SCREW (M3X10), P, SW (+)
4-396-203-01	SCREW (+B M3X12), PREVENTION

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-477-11	ELECT	47MF	20%	25V	
C2	1-124-477-11	ELECT	47MF	20%	25V	
C3	1-124-477-11	ELECT	47MF	20%	25V	
C4	1-124-477-11	ELECT	47MF	20%	25V	
C5	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	
C6	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	
C7	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C8	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C9	1-124-477-11	ELECT	47MF	20%	25V	
C10	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C11	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C12	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C13	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C14	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C15	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C16	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C17	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C18	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C19	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C20	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C21	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C22	1-124-903-11	ELECT	1MF	20%	50V	

<COMPOSITION CIRCUIT BLOCK>

REF.NO.	PART NO.	DESCRIPTION
CP1	1-232-029-11	COMPOSITION CIRCUIT BLOCK
CP2	1-249-429-11	COMPOSITION CIRCUIT BLOCK

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1	8-719-987-06	DIODE WG713A
D2	8-719-987-06	DIODE WG713A
D3	8-719-987-06	DIODE WG713A
D5	8-719-900-95	DIODE V09G
D6	8-719-900-95	DIODE V09G
D7	8-719-900-95	DIODE V09G
D8	8-719-104-34	DIODE 1S2836
D9	8-719-104-34	DIODE 1S2836
D10	8-719-901-68	DIODE GL-6R202

Z **M1**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<IC>				
IC1	8-759-995-97	IC MB8855-1314N				
IC2	8-759-154-99	IC UPD78C10AGF-3BE				
IC3	8-759-746-16	IC MBM27C64-25				
IC4	8-759-233-16	IC TC74HC373AF				
IC5	8-759-232-58	IC TC74HC139AF				
IC6	8-759-242-28	IC TC74HC4511AF				
IC7	8-759-242-28	IC TC74HC4511AF				
IC8	8-759-232-16	IC TC74HC14AF				
IC9	8-759-232-92	IC TC74HC244AF				
IC10	8-759-232-92	IC TC74HC244AF				
IC11	8-759-232-92	IC TC74HC244AF				
IC12	8-759-982-13	IC RC7812FA				
IC13	8-759-982-07	IC RC7808FA				
IC14	8-759-231-53	IC TA7805S				
IC15	8-759-998-74	IC RH5VA33CC				
		<JACK>				
J1	1-507-251-XX	JACK				
J2	1-507-251-XX	JACK				
J3	1-507-251-XX	JACK				
		<TRANSISTOR>				
Q1	8-729-216-22	TRANSISTOR 2SA1162-G				
Q2	8-729-100-56	TRANSISTOR 2SC1623-L6				
		<RESISTOR>				
R1	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R3	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R4	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R5	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R6	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R7	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R8	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R9	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R10	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R11	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R12	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R13	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R14	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R15	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R16	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R17	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R18	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R19	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R20	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R21	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R22	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R23	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R24	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R25	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R26	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R27	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R28	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R29	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R30	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R31	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R32	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R33	1-249-474-11	CARBON	1	5%	1/2W	F

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<RELAY>				
RL1	1-515-764-11	RELAY				
		<SWITCH>				
SW1	1-572-853-11	SWITCH, ROTARY				
SW2	1-572-853-11	SWITCH, ROTARY				
SW3	1-570-472-11	SWITCH, KEY BOARD				
SW4	1-570-598-11	SWITCH, DIP				
		<CRYSTAL>				
X1	1-567-192-11	OSCILLATOR, CERAMIC				
X2	1-527-828-00	OSCILLATOR, CRYSTAL				

****

⚠MI BOARD (SOPS1008B)
****

REF.NO.	PART NO.	DESCRIPTION				REMARK
	⚠ 1-543-060-00	CURE				
	⚠ 9-983-709-01	RUBBER (STB-CR07), RADIATION				
	⚠*2-643-841-01	SHEET, INSULATING				
	⚠*4-873-829-02	HEAT SINK				
		<CAPACITOR>				
C108	⚠1-161-743-12	CERAMIC	0.0047MF		400V	
C109	⚠1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V	
C110	⚠1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V	
C111	⚠1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V	
C112	⚠1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V	
C114	⚠1-136-626-11	FILM	1MF	10%	250V	
C115	⚠1-136-626-11	FILM	1MF	10%	250V	
C116	⚠1-136-626-11	FILM	1MF	10%	250V	
C117	⚠1-136-626-11	FILM	1MF	10%	250V	
C118	⚠1-161-915-00	CERAMIC	0.001MF	10%	500V	
C119	⚠1-161-915-00	CERAMIC	0.001MF	10%	500V	
C120	⚠1-136-202-11	FILM	0.33MF	5%	400V	
C121	⚠1-136-202-11	FILM	0.33MF	5%	400V	
C122	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V	
C124	⚠1-161-743-12	CERAMIC	0.0047MF		400V	
C125	⚠1-161-743-12	CERAMIC	0.0047MF		400V	
C126	⚠1-161-743-12	CERAMIC	0.0047MF		400V	
C201	⚠1-102-030-00	CERAMIC	330PF	10%	500V	
C202	⚠1-102-030-00	CERAMIC	330PF	10%	500V	
C203	⚠1-102-030-00	CERAMIC	330PF	10%	500V	
C204	⚠1-102-030-00	CERAMIC	330PF	10%	500V	
C205	⚠1-162-558-11	CERAMIC	100PF	10%	2KV	
C206	⚠1-162-558-11	CERAMIC	100PF	10%	2KV	
C207	⚠1-162-558-11	CERAMIC	100PF	10%	2KV	
C208	⚠1-162-558-11	CERAMIC	100PF	10%	2KV	
C209	⚠1-162-131-11	CERAMIC	220PF	10%	2KV	
C210	⚠1-162-131-11	CERAMIC	220PF	10%	2KV	
C211	⚠1-162-131-11	CERAMIC	220PF	10%	2KV	
C212	⚠1-162-131-11	CERAMIC	220PF	10%	2KV	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C213	⚠1-126-911-11	ELECT	47MF	0	200V
C214	⚠1-126-911-11	ELECT	47MF	0	200V
C215	⚠1-126-913-11	ELECT	220MF	0	160V
C216	⚠1-126-913-11	ELECT	220MF	0	160V
C217	⚠1-126-912-11	ELECT	33MF	0	250V
C218	⚠1-126-913-11	ELECT	220MF	0	160V
C219	⚠1-130-483-00	MYLAR	0.01MF	5%	50V
C221	⚠1-130-493-00	MYLAR	0.068MF	5%	50V
C222	⚠1-130-485-00	MYLAR	0.015MF	5%	50V
C223	⚠1-130-485-00	MYLAR	0.015MF	5%	50V
C224	⚠1-126-911-11	ELECT	47MF	0	200V
C225	⚠1-123-875-11	ELECT	10MF	20%	50V
C226	⚠1-124-478-11	ELECT	100MF	20%	25V
C227	⚠1-124-443-00	ELECT	100MF	20%	10V
C228	⚠1-130-495-00	MYLAR	0.1MF	5%	50V
C229	⚠1-130-495-00	MYLAR	0.1MF	5%	50V
C230	⚠1-124-902-00	ELECT	0.47MF	20%	50V
C231	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C232	⚠1-161-925-00	CERAMIC	100PF	10%	500V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN103	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN104	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN106	⚠*1-560-549-00	PIN (WITH V CONNECTOR BASE) 3P
CN107	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN108	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN109	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN110	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN111	⚠*1-535-419-00	TAB, FASTEN (PCB)
CN202	⚠*1-560-894-00	PIN, CONNECTOR 6P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D101	⚠8-719-500-27	DIODE S15VB60
D102	⚠8-807-913-21	DIODE 11EQS04
D103	⚠8-807-913-21	DIODE 11EQS04
D201	⚠8-719-971-20	DIODE ERC38-06
D202	⚠8-719-971-20	DIODE ERC38-06
D203	⚠8-719-971-20	DIODE ERC38-06
D204	⚠8-719-971-20	DIODE ERC38-06
D205	⚠8-719-979-28	DIODE ESAD39-06C
D206	⚠8-719-979-29	DIODE ESAD39-06N
D207	⚠8-719-911-55	DIODE U05G
D208	⚠8-719-911-55	DIODE U05G
D209	⚠8-719-109-89	DIODE RD5.6ES-B2
D210	⚠8-719-911-19	DIODE 1SS119
D211	⚠8-719-911-19	DIODE 1SS119
D213	⚠8-719-110-88	DIODE RD39ES-B2
D214	⚠8-719-110-88	DIODE RD39ES-B2
D215	⚠8-719-911-19	DIODE 1SS119
D216	⚠8-719-911-19	DIODE 1SS119
D218	⚠8-719-912-20	DIODE 1SS120
D219	⚠8-719-912-20	DIODE 1SS120
D220	⚠8-719-911-19	DIODE 1SS119

<FUSE>

REF.NO.	PART NO.	DESCRIPTION
F103	⚠1-532-496-11	FUSE, THERMO

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC201	⚠8-759-135-80	IC UPC358C
IC202	⚠8-759-908-15	IC TL431CLP
IC202	⚠8-759-908-15	IC TL431CLPB
IC203	⚠8-759-135-80	IC UPC358C
IC204	⚠8-759-908-15	IC TL431CLP

<COIL>

REF.NO.	PART NO.	DESCRIPTION
L104	⚠1-424-058-11	LFT
L201	⚠1-412-263-11	COIL,CHOKE(CCLU160708Z) 22MMH
L202	⚠1-412-264-11	COIL,CHOKE(CCLU270817Z)1.36MMH
L203	⚠1-408-949-11	COIL (WITH CORE) (CHOKE COIL)
L204	⚠1-421-370-00	COIL, CHOKE

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q101	⚠1-807-107-11	TRANSISTOR 2SK827
Q102	⚠1-807-107-11	TRANSISTOR 2SK827
Q103	⚠1-807-107-11	TRANSISTOR 2SK827
Q104	⚠1-807-107-11	TRANSISTOR 2SK827
Q105	⚠8-729-113-34	TRANSISTOR 2SB733-5
Q106	⚠8-729-113-34	TRANSISTOR 2SB733-5
Q201	⚠8-729-821-53	TRANSISTOR 2SC3042-N
Q202	⚠8-729-105-97	TRANSISTOR 2SA1156-2K
Q203	⚠8-729-175-22	TRANSISTOR 2SC2752-L
Q204	⚠8-729-119-76	TRANSISTOR 2SA1175-HFE
Q205	⚠8-729-119-76	TRANSISTOR 2SA1175-HFE
Q206	⚠8-729-119-76	TRANSISTOR 2SA1175-HFE
Q207	⚠8-729-119-76	TRANSISTOR 2SA1175-HFE
Q208	⚠8-729-208-04	TRANSISTOR 2SK422
Q209	⚠8-729-208-04	TRANSISTOR 2SK422

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R102	⚠1-205-916-11	WIREWOUND	5	5%	20W	F
R103	⚠1-205-916-11	WIREWOUND	5	5%	20W	F
R104	⚠1-205-624-00	WIREWOUND	100	5%	5W	F
R105	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R106	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R107	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R108	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R109	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R110	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R111	⚠1-205-624-00	WIREWOUND	100	5%	5W	F
R201	⚠1-205-677-00	WIREWOUND	1K	5%	5W	F
R202	⚠1-205-677-00	WIREWOUND	1K	5%	5W	F
R203	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R204	⚠1-249-441-11	CARBON	100K	5%	1/4W	
R205	⚠1-249-441-11	CARBON	100K	5%	1/4W	
R206	⚠1-249-405-11	CARBON	100	5%	1/4W	
R207	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R208	⚠1-215-477-00	METAL	220K	1%	1/6W	
R209	⚠1-215-477-00	METAL	220K	1%	1/6W	
R210	⚠1-215-445-00	METAL	10K	1%	1/6W	
R212	⚠1-205-676-11	WIREWOUND	4.7	5%	5W	F
R213	⚠1-215-477-00	METAL	220K	1%	1/6W	
R214	⚠1-215-477-00	METAL	220K	1%	1/6W	
R215	⚠1-215-445-00	METAL	10K	1%	1/6W	
R216	⚠1-249-424-11	CARBON	3.9K	5%	1/4W	
R217	⚠1-247-887-00	CARBON	220K	5%	1/4W	
R218	⚠1-247-887-00	CARBON	220K	5%	1/4W	
R219	⚠1-247-895-00	CARBON	470K	5%	1/4W	
R220	⚠1-247-903-00	CARBON	1M	5%	1/4W	
R221	⚠1-249-419-11	CARBON	1.5K	5%	1/4W	
R222	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R223	⚠1-249-426-11	CARBON	5.6K	5%	1/4W	
R224	⚠1-249-425-11	CARBON	4.7K	5%	1/4W	

M1 **C1**

- ✱ : Selected to yield optimum performance.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R226	⚠1-247-747-11	CARBON	470	5%	1/2W	F
R227	⚠1-247-747-11	CARBON	470	5%	1/2W	F
R228	⚠1-215-431-00	METAL	2.7K	1%	1/6W	
※R229	⚠1-215-456-00	METAL	30K	1%	1/6W	
※R229	⚠1-215-457-00	METAL	33K	1%	1/6W	
※R229	⚠1-215-458-00	METAL	36K	1%	1/6W	
※R229	⚠1-215-459-00	METAL	39K	1%	1/6W	
※R229	⚠1-215-460-00	METAL	43K	1%	1/6W	
※R229	⚠1-215-461-00	METAL	47K	1%	1/6W	
※R229	⚠1-215-462-00	METAL	51K	1%	1/6W	
※R229	⚠1-215-463-00	METAL	56K	1%	1/6W	
※R229	⚠1-215-464-00	METAL	62K	1%	1/6W	
R230	⚠1-249-426-11	CARBON	5.6K	5%	1/4W	
R231	⚠1-249-426-11	CARBON	5.6K	5%	1/4W	
R232	⚠1-215-473-00	METAL	150K	1%	1/6W	
R233	⚠1-215-441-00	METAL	6.8K	1%	1/6W	
R234	⚠1-215-469-00	METAL	100K	1%	1/6W	
R235	⚠1-215-469-00	METAL	100K	1%	1/6W	
R236	⚠1-215-436-00	METAL	4.3K	1%	1/6W	
R237	⚠1-215-902-11	METAL OXIDE	47K	5%	2W	F
R238	⚠1-215-902-11	METAL OXIDE	47K	5%	2W	F
R239	⚠1-205-677-00	WIREWOUND	1K	5%	5W	F
R240	⚠1-205-677-00	WIREWOUND	1K	5%	5W	F
R241	⚠1-249-432-11	CARBON	18K	5%	1/4W	
R242	⚠1-249-426-11	CARBON	5.6K	5%	1/4W	
R243	⚠1-249-431-11	CARBON	15K	5%	1/4W	
R244	⚠1-249-413-11	CARBON	470	5%	1/4W	
R245	⚠1-249-431-11	CARBON	15K	5%	1/4W	
R246	⚠1-247-893-11	CARBON	390K	5%	1/4W	
R247	⚠1-215-465-00	METAL	68K	1%	1/6W	
R248	⚠1-215-433-00	METAL	3.3K	1%	1/6W	
R249	⚠1-215-465-00	METAL	68K	1%	1/6W	
R250	⚠1-215-465-00	METAL	68K	1%	1/6W	
R251	⚠1-215-433-00	METAL	3.3K	1%	1/6W	
R252	⚠1-215-447-00	METAL	12K	1%	1/6W	
R253	⚠1-215-447-00	METAL	12K	1%	1/6W	
R254	⚠1-215-413-00	METAL	470	1%	1/6W	
R255	⚠1-216-377-11	METAL OXIDE	4.7	5%	2W	F

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV201	⚠1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV202	⚠1-228-990-00	RES, ADJ, METAL GLAZE 1K

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RY101	⚠1-515-450-12	RELAY, POWER

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
T101	⚠1-449-845-11	TRANSFORMER, CONVERTER
T102	⚠1-421-819-11	TRANSFORMER, CURRENT
T103	⚠1-437-188-11	TRANSFORMER, DRIVE
T104	⚠1-437-188-11	TRANSFORMER, DRIVE

<ARRESTER>

REF.NO.	PART NO.	DESCRIPTION
VZ101	⚠1-576-084-11	ARRESTER, GUS TUBE (M2P-470L)

****

⚠C1 BOARD (SOPS1008B)
****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C51	⚠1-130-471-00	MYLAR	0.001MF	5%	50V	
C52	⚠1-130-471-00	MYLAR	0.001MF	5%	50V	
C53	⚠1-124-902-00	ELECT	0.47MF	20%	50V	
C54	⚠1-124-478-11	ELECT	100MF	20%	25V	
C56	⚠1-130-483-00	MYLAR	0.01MF	5%	50V	
C57	⚠1-130-495-00	MYLAR	0.1MF	5%	50V	
C58	⚠1-124-910-11	ELECT	47MF	20%	50V	
C59	⚠1-124-902-00	ELECT	0.47MF	20%	50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN51	⚠*1-560-741-00	PIN, CONNECTOR 12P
CN52	⚠*1-564-517-11	PLUG, CONNECTOR 2P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D51	⚠8-807-913-21	DIODE 11EQS04
D52	⚠8-807-913-21	DIODE 11EQS04
D53	⚠8-807-913-21	DIODE 11EQS04
D54	⚠8-807-913-21	DIODE 11EQS04
D55	⚠8-807-913-21	DIODE 11EQS04
D56	⚠8-807-913-21	DIODE 11EQS04
D57	⚠8-719-911-19	DIODE 1SS119
D58	⚠8-719-107-87	THYRISTOR 03P2M
D59	⚠8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC51	⚠8-759-906-62	IC MB3759-SNY

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L51	⚠1-410-466-41	INDUCTOR	4.7UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q53	⚠8-729-119-76	TRANSISTOR 2SA1175-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R51	⚠1-249-410-11	CARBON	270	5%	1/4W	
R52	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R53	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R54	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R56	⚠1-249-433-11	CARBON	22K	5%	1/4W	
R57	⚠1-247-897-11	CARBON	560K	5%	1/4W	
R58	⚠1-249-437-11	CARBON	47K	5%	1/4W	
R59	⚠1-249-405-11	CARBON	100	5%	1/4W	
R60	⚠1-247-885-00	CARBON	180K	5%	1/4W	
R61	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R62	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R63	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R64	⚠1-247-895-00	CARBON	470K	5%	1/4W	
R65	⚠1-249-425-11	CARBON	4.7K	5%	1/4W	
R66	⚠1-249-426-11	CARBON	5.6K	5%	1/4W	
R67	⚠1-249-425-11	CARBON	4.7K	5%	1/4W	
R68	⚠1-249-415-11	CARBON	680	5%	1/4W	
R69	⚠1-249-405-11	CARBON	100	5%	1/4W	
R70	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R71	⚠1-215-469-00	METAL	100K	1%	1/6W	

****

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

⚠M2 BOARD (SOPS1008B)

****

REF.NO.	PART NO.	DESCRIPTION			REMARK
	⚠1-543-060-00	CORE			

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C151	⚠1-125-592-11	ELECT(BLOCK)	270MF	20%	400V
C152	⚠1-136-626-11	FILM	1MF	10%	250V
C153	⚠1-136-626-11	FILM	1MF	10%	250V
C154	⚠1-161-915-00	CERAMIC	0.001MF	10%	500V
C155	⚠1-161-915-00	CERAMIC	0.001MF	10%	500V
C156	⚠1-136-209-11	FILM	0.1MF	10%	400V
C157	⚠1-130-491-00	MYLAR	0.047MF	5%	50V
C158	⚠1-130-475-00	MYLAR	0.0022MF	5%	50V
C165	⚠1-126-233-11	ELECT	22MF	20%	25V
C166	⚠1-136-626-11	FILM	1MF	10%	250V
C167	⚠1-136-626-11	FILM	1MF	10%	250V
C168	⚠1-136-202-11	FILM	0.33MF	5%	400V
C169	⚠1-136-202-11	FILM	0.33MF	5%	400V
C170	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C251	⚠1-162-659-11	CERAMIC	0.0015MF	10%	500V
C252	⚠1-162-659-11	CERAMIC	0.0015MF	10%	500V
C253	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C254	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C255	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C256	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C257	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C258	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C259	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C260	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C261	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C262	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C263	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C264	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C265	⚠1-124-473-11	ELECT	1000MF	20%	10V
C266	⚠1-124-473-11	ELECT	1000MF	20%	10V
C267	⚠1-124-636-00	ELECT	3300MF	20%	25V
C268	⚠1-124-636-00	ELECT	3300MF	20%	25V
C269	⚠1-124-913-11	ELECT	470MF	20%	50V
C270	⚠1-124-913-11	ELECT	470MF	20%	50V
C271	⚠1-124-472-11	ELECT	470MF	20%	6.3V
C272	⚠1-124-472-11	ELECT	470MF	20%	6.3V
C273	⚠1-124-480-11	ELECT	470MF	20%	25V
C274	⚠1-124-480-11	ELECT	470MF	20%	25V
C275	⚠1-124-122-11	ELECT	100MF	20%	50V
C276	⚠1-124-122-11	ELECT	100MF	20%	50V
C278	⚠1-130-489-00	MYLAR	0.033MF	5%	50V
C279	⚠1-130-485-00	MYLAR	0.015MF	5%	50V
C280	⚠1-130-485-00	MYLAR	0.015MF	5%	50V
C281	⚠1-130-495-00	MYLAR	0.1MF	5%	50V
C282	⚠1-130-495-00	MYLAR	0.1MF	5%	50V
C283	⚠1-124-442-00	ELECT	330MF	20%	6.3V
C284	⚠1-124-556-11	ELECT	2200MF	20%	16V
C285	⚠1-124-478-11	ELECT	100MF	20%	25V
C286	⚠1-124-360-00	ELECT	1000MF	20%	16V
C287	⚠1-123-875-11	ELECT	10MF	20%	50V
C288	⚠1-126-103-11	ELECT	470MF	20%	16V
C289	⚠1-124-902-00	ELECT	0.47MF	20%	50V
C290	⚠1-124-478-11	ELECT	100MF	20%	25V
C291	⚠1-130-495-00	MYLAR	0.1MF	5%	50V
C292	⚠1-130-495-00	MYLAR	0.1MF	5%	50V
C293	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C294	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C295	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C296	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C297	⚠1-161-925-00	CERAMIC	100PF	10%	500V
C298	⚠1-161-925-00	CERAMIC	100PF	10%	500V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN151	⚠*1-560-549-00	PIN (WITH V CONNECTOR BASE) 3P	
CN252	⚠*1-560-894-00	PIN, CONNECTOR 6P	
CN254	⚠*1-560-891-00	PIN, CONNECTOR 3P	
CN255	⚠*1-560-891-00	PIN, CONNECTOR 3P	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D151	⚠8-807-913-21	DIODE 11EQS04	
D152	⚠8-807-913-21	DIODE 11EQS04	
D153	⚠8-719-300-70	DIODE RH-1C	
D154	⚠8-719-912-20	DIODE 1SS120	
D155	⚠8-719-912-20	DIODE 1SS120	
D156	⚠8-719-109-89	DIODE RD5.6ES-B2	
D158	⚠8-719-912-20	DIODE 1SS120	
D159	⚠8-719-912-20	DIODE 1SS120	
D251	⚠8-719-302-81	DIODE FMG-24S	
D252	⚠1-807-793-11	DIODE FML-22S	
D253	⚠8-719-302-60	DIODE FML-32S	
D254	⚠1-807-793-21	DIODE FML-22R	
D255	⚠1-807-793-21	DIODE FML-22R	
D256	⚠8-719-302-82	DIODE FMG-24R	
D265	⚠8-719-110-88	DIODE RD39ES-B2	
D266	⚠8-719-110-88	DIODE RD39ES-B2	
D267	⚠8-719-200-02	DIODE 10E-2	
D268	⚠8-719-200-02	DIODE 10E-2	
D270	⚠8-719-911-19	DIODE 1SS119	
D271	⚠8-719-911-19	DIODE 1SS119	
D272	⚠8-719-911-19	DIODE 1SS119	
D273	⚠8-719-911-19	DIODE 1SS119	
D274	⚠8-719-911-19	DIODE 1SS119	
D275	⚠8-719-911-19	DIODE 1SS119	
D276	⚠8-719-109-89	DIODE RD5.6ES-B2	
D277	⚠8-719-110-41	DIODE RD15ES-B2	
D278	⚠8-719-110-48	DIODE RD18ES-B1	
D279	⚠8-719-109-97	DIODE RD6.8ES-B2	
D280	⚠8-719-110-33	DIODE RD12ES-B3	
D281	⚠1-807-774-11	DIODE AU02A	
D282	⚠8-807-913-21	DIODE 11EQS04	
D283	⚠8-719-109-84	DIODE RD5.1ES-B1	
D284	⚠8-719-109-97	DIODE RD6.8ES-B2	
D285	⚠8-719-911-19	DIODE 1SS119	
D286	⚠8-719-911-19	DIODE 1SS119	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC251	⚠8-759-908-15	IC TL431CLP	
IC252	⚠8-759-135-80	IC UPC358C	
IC253	⚠8-759-143-00	IC UPC7805HF	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L151	⚠1-424-058-11	LFT	
L251	⚠1-412-266-11	COIL, CHOKE (CCL U230914Z) 36UH	
L252	⚠1-412-266-11	COIL, CHOKE (CCL U230914Z) 36UH	
L253	⚠1-412-265-11	COIL, CHOKE(CCLU230914Z)2.5MMH	
L254	⚠1-421-465-00	COIL, FERRITE CHOKE 68UH	
L255	⚠1-421-370-00	COIL, CHOKE	

M2 **C2**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
L256	⚠1-421-370-00	COIL, CHOKE	
L257	⚠1-421-370-00	COIL, CHOKE	
L258	⚠1-421-370-00	COIL, CHOKE	
L259	⚠1-421-465-00	COIL, FERRITE CHOKE 68UH	

<IC LINK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
PS151	⚠1-532-605-11	LINK, IC	
PS151	⚠1-532-679-11	LINK, IC	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q151	⚠1-808-107-11	TRANSISTOR 2SK827	
	⚠9-983-709-01	RUBBER (STB-CR07), RADIATION ;Q151	
Q152	⚠1-808-107-11	TRANSISTOR 2SK827	
	⚠9-983-709-01	RUBBER (STB-CR07), RADIATION ;Q152	
Q153	⚠8-729-113-34	TRANSISTOR 2SB733-4	
Q154	⚠8-729-113-34	TRANSISTOR 2SB733-4	
Q155	⚠8-729-802-08	TRANSISTOR 2SC3150	
Q156	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q251	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q252	⚠8-729-188-23	TRANSISTOR 2SD882-P	
	⚠9-983-709-01	RUBBER (STB-CR07), RADIATION ; Q252	
Q253	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q254	⚠8-729-140-97	TRANSISTOR 2SB734-34	
Q255	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q256	⚠8-729-208-04	TRANSISTOR 2SK422	
Q257	⚠8-729-208-04	TRANSISTOR 2SK422	
Q258	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q259	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q260	⚠8-729-119-78	TRANSISTOR 2SC2785-HFE	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R151	⚠1-205-652-00	WIREWOUND	68	5%	5W	F
R152	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R153	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R154	⚠1-247-717-11	CARBON	2.2K	5%	1/4W	
R155	⚠1-247-717-11	CARBON	2.2K	5%	1/4W	
R156	⚠1-215-902-11	METAL OXIDE	47K	5%	2W	F
R157	⚠1-215-902-11	METAL OXIDE	47K	5%	2W	F
R158	⚠1-246-539-00	CARBON	560K	5%	1/4W	
R159	⚠1-246-539-00	CARBON	560K	5%	1/4W	
R160	⚠1-247-733-11	CARBON	33	5%	1/2W	
R161	⚠1-247-713-11	CARBON	1K	5%	1/4W	
R162	⚠1-249-407-11	CARBON	150	5%	1/4W	
R163	⚠1-249-390-11	CARBON	5.6	5%	1/4W	
R164	⚠1-249-405-11	CARBON	100	5%	1/4W	
R165	⚠1-247-741-11	CARBON	150	5%	1/2W	F
R166	⚠1-249-393-11	CARBON	10	5%	1/4W	
R251	⚠1-205-622-00	WIREWOUND	33	5%	5W	F
R252	⚠1-205-622-00	WIREWOUND	33	5%	5W	F
R253	⚠1-216-359-00	METAL OXIDE	6.8	5%	1W	F
R254	⚠1-247-747-11	CARBON	470	5%	1/2W	
R255	⚠1-247-747-11	CARBON	470	5%	1/2W	
R256	⚠1-249-434-11	CARBON	27K	5%	1/4W	
R258	⚠1-249-437-11	CARBON	47K	5%	1/4W	
R259	⚠1-249-435-11	CARBON	33K	5%	1/4W	
R260	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R261	⚠1-215-424-00	METAL	1.3K	1%	1/6W	
R262	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R263	⚠1-215-452-00	METAL	20K	1%	1/6W	
R264	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R265	⚠1-215-448-00	METAL	13K	1%	1/6W	
R266	⚠1-215-420-00	METAL	910	1%	1/6W	
R267	⚠1-205-911-11	WIREWOUND	10	5%	5W	F
R268	⚠1-247-711-11	CARBON	680	5%	1/4W	
R269	⚠1-247-700-11	CARBON	100	5%	1/4W	
R270	⚠1-215-430-00	METAL	2.4K	1%	1/6W	
R271	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R272	⚠1-249-397-11	CARBON	22	5%	1/4W	
R273	⚠1-249-419-11	CARBON	1.5K	5%	1/4W	
R274	⚠1-249-432-11	CARBON	18K	5%	1/4W	
R275	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R276	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R277	⚠1-249-421-11	CARBON	2.2K	5%	1/4W	
R278	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R279	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R280	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R281	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R282	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R283	⚠1-249-431-11	CARBON	15K	5%	1/4W	
R284	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R285	⚠1-249-417-11	CARBON	1K	5%	1/4W	
R286	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R287	⚠1-249-429-11	CARBON	10K	5%	1/4W	
R288	⚠1-249-431-11	CARBON	15K	5%	1/4W	
R289	⚠1-249-429-11	CARBON	10K	5%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV251	⚠1-228-990-00	RES, ADJ, METAL GLAZE 1K	

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
T151	⚠1-449-846-11	TRANSFORMER, CONVERTER	
T152	⚠1-421-819-11	TRANSFORMER, CURRENT	
T153	⚠1-437-188-11	TRANSFORMER, DRIVE	
T154	⚠1-437-188-11	TRANSFORMER, DRIVE	
T155	⚠1-449-847-11	TRANSFORMER, CONVERTER	

****

⚠C2 BOARD (SOPS1008B)

****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C51	⚠1-130-471-00	MYLAR	0.001MF	5%	50V	
C52	⚠1-130-471-00	MYLAR	0.001MF	5%	50V	
C53	⚠1-124-902-00	ELECT	0.47MF	20%	50V	
C54	⚠1-124-478-11	ELECT	100MF	20%	25V	
C55	⚠1-130-471-00	FILM	0.001MF	5%	50V	
C56	⚠1-130-481-00	MYLAR	0.0068MF	5%	50V	
C57	⚠1-130-495-00	MYLAR	0.1MF	5%	50V	
C58	⚠1-123-875-11	ELECT	10MF	20%	50V	
C59	⚠1-123-875-11	ELECT	10MF	20%	50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN51	⚠*1-560-741-00	PIN, CONNECTOR 12P	
CN52	⚠*1-564-517-11	PLUG, CONNECTOR 2P	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D51	⚠8-719-911-19	DIODE 1SS119	
D52	⚠8-719-911-19	DIODE 1SS119	
D53	⚠8-719-911-19	DIODE 1SS119	
D54	⚠8-719-911-19	DIODE 1SS119	
D55	⚠8-807-913-21	DIODE 11EQS04	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

F.NO.	PART NO.	DESCRIPTION	REMARK
D56	⚠8-807-913-21	DIODE 11EQS04	
D57	⚠8-719-911-19	DIODE 1SS119	
D58	⚠8-719-107-87	THYRISTOR 03P2M	
D59	⚠8-719-911-19	DIODE 1SS119	

<IC>

IC51	⚠8-759-906-62	IC MB3759-SNY	

<COIL>

L51	⚠1-410-466-41	INDUCTOR 4.7UH	

<TRANSISTOR>

Q53	⚠8-729-119-76	TRANSISTOR 2SA1175-HFE	

<RESISTOR>

R51	⚠1-249-411-11	CARBON	330	5%	1/4W
R52	⚠1-249-410-11	CARBON	270	5%	1/4W
R53	⚠1-249-417-11	CARBON	1K	5%	1/4W
R54	⚠1-249-417-11	CARBON	1K	5%	1/4W
R55	⚠1-215-437-00	METAL	4.7K	1%	1/6W
R56	⚠1-247-903-00	CARBON	1M	5%	1/4W
R57	⚠1-247-897-11	CARBON	560K	5%	1/4W
R58	⚠1-249-433-11	CARBON	22K	5%	1/4W
R59	⚠1-249-417-11	CARBON	1K	5%	1/4W
R60	⚠1-249-425-11	CARBON	4.7K	5%	1/4W
.61	⚠1-249-421-11	CARBON	2.2K	5%	1/4W
R62	⚠1-249-425-11	CARBON	4.7K	5%	1/4W
R63	⚠1-249-425-11	CARBON	4.7K	5%	1/4W
R64	⚠1-247-895-00	CARBON	470K	5%	1/4W
R65	⚠1-249-425-11	CARBON	4.7K	5%	1/4W
R66	⚠1-249-423-11	CARBON	3.3K	5%	1/4W
R67	⚠1-249-426-11	CARBON	5.6K	5%	1/4W
R68	⚠1-249-415-11	CARBON	680	5%	1/4W
R69	⚠1-249-405-11	CARBON	100	5%	1/4W
R70	⚠1-249-421-11	CARBON	2.2K	5%	1/4W
R71	⚠1-249-427-11	CARBON	6.8K	5%	1/4W

****

MISCELLANEOUS
****

⚠ 1-236-604-11	FILTER BLOCK, NOISE (M3B BOARD)
⚠ 1-238-755-11	RESISTOR ASSY, HIGH-VOLTAGE
⚠ 1-413-483-13	REGULATOR, SWITCHING (SOPS1008B)
⚠ 1-451-355-11	DEFLECTION YOKE (Y636PJ)
⚠ 1-452-361-91	NECK ASSY, CRT (NA365)
⚠ 1-452-429-11	NECK ASSY, CRT (NA366)
⚠ 1-453-108-11	DC BLOCK, HIGH-VOLTAGE
⚠ 1-453-108-31	DC BLOCK, HIGH-VOLTAGE
1-466-236-11	INPUT UNIT, RGB
1-533-224-11	HOLDER, FUSE (DIA. 5.2)
1-541-702-11	FAN, DC
1-541-703-11	FAN, DC
*1-555-110-00	CABLE, P-P
1-559-865-31	LEAD ASSY, HIGH-BOLTAGE
⚠ 1-560-222-11	3P INLETALIZED
1-571-900-11	SWITCH, MICRO
1-574-973-11	LED ASSY, HIGH-VOLTAGE
*1-575-091-11	CABLE, P-P
1-575-092-11	CONNECTOR ASSY, MULTI 14P

REF.NO.	PART NO.	DESCRIPTION	REMARK
C901	⚠ 1-136-951-11	CAP, METALIZED FILM 0.1MF 20%	250V
C902	⚠ 1-136-951-11	CAP, METALIZED FILM 0.1MF 20%	250V
C903	⚠ 1-136-951-11	CAP, METALIZED FILM 0.1MF 20%	250V
F901	⚠ 1-532-325-00	FUSE, TIME-LAG (6.3A/250V)	
R901	⚠ 1-202-719-00	RES, SOLID 1.00MM 10% 1/2W	
SW901	⚠ 1-572-067-21	SWITCH, PUSH (AC POWER)(1 KEY)	
T901	⚠ 1-944-506-12	HARNESS (P)	
V901	⚠ 8-734-023-05	CRT (R)	
V902	⚠ 8-734-021-05	CRT (G)	
V903	⚠ 8-734-022-05	CRT (B)	

****

ACCESSORIES & PACKING MATERIALS
****

PART NO.	DESCRIPTION	REMARK
*X-4030-308-1	FRAME ASSY	
*X-4029-850-1	PLATE ASSY, BOTTOM	
1-575-100-21	CABLE, MINIATURE PLUG	
⚠ 1-590-151-11	CORD SET, POWER (10A/250V)	
1-941-648-22	CONNECTOR ASSY, MICRO 2P	
*3-704-356-01	SHEET (STANDARD), PROTECTION	
3-753-640-41	MANUAL, INSTR, ESTABLISHMENT	
3-753-641-41	MANUAL, INSTRUCTION	
*4-032-414-01	HOLDER	
*4-032-430-01	BOARD	
*4-032-431-01	PLATE, SIDE	
*4-032-439-01	TRAY	
*4-032-440-01	PALLET	
*4-356-207-00	BAND, ASSY	

9-978-288-01

Sony Corporation
Display Products Group

English
92GZ1512-1
Printed in Japan

©1992. 7

XXG
246

RVP-400QM

SONY
SERVICE MANUAL

AEP Model
Chassis No. SCC-D82C-A

V03202

SUPPLEMENT-1

INTRODUCTION

- BA board :Added the circuits around MATRIX circuit (IC8).
- BB board :Changed the circuits around MODE SWITCH circuits (IC405).
- Y board :PLL circuit (IC20,21) and peripheral circuit of IC12 and IC13 are also changed.

Note)
Before using the circuit board, confirm that the parts number shown below and the parts number of the circuit board which is being used in your set are the same.

Board (Complete No.)	Board Part. No.
BA (A-1135-692-A)	1-639-924-14
BB (A-1135-710-A)	1-639-925-14
Y (A-1394-300-A)	1-629-824-15

TABLE OF CONTENTS

Section *Title* *Page*

7. DIAGRAMS
7-4. Schematic Diagrams and Printed Wiring Boards ········ 2
BA Board ········ 3
BB Board ········ 18
Y Board ········ 28

9. ELECTRICAL PARTS LIST ········ 41

MICROFILM

XXG
246

RVP-400QM

SONY
SERVICE MANUAL

AEP Model
Chassis No. SCC-D82C-A

VO3202

SUPPLEMENT-1

INTRODUCTION

- BA board :Added the circuits around MATRIX circuit (IC8).
- BB board :Changed the circuits around MODE SWITCH circuits (IC405).
- Y board :PLL circuit (IC20,21) and peripheral circuit of IC12 and IC13 are also changed.

Note)
Before using the circuit board, confirm that the parts number shown below and the parts number of the circuit board which is being used in your set are the same.

Board (Complete No.)	Board Part. No.
BA (A-1135-692-A)	1-639-924-14
BB (A-1135-710-A)	1-639-925-14
Y (A-1394-300-A)	1-629-824-15

TABLE OF CONTENTS

Section *Title* *Page*

7. DIAGRAMS
7-4. Schematic Diagrams and Printed Wiring Boards ········ 2
BA Board ········ 3
BB Board ········ 18
Y Board ········ 28

9. ELECTRICAL PARTS LIST ········ 41

MICROFILM

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SECTION 7
DIAGRAMS

7-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms, 1/4W in resistance; 1/10W in chip resistance.
  kΩ =1000 Ω , MΩ =1000kΩ
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- □ : panel designation and adjustment for repair.
- All variable and adjustable resistors have charactristic curve B, unless otherwise noted.

- Voltage value is the reference value between it & the earth, when NTSC 3.58 color bar signal is received from color bar generator (digital multi- meter used : 10M ohms/V DC).
- ☆ : Displays a list of BB, BA board modes.
  (PAL, SECAM, NTSC 3.58, NTSC 4.43)
  Displays a list of existing voltages, when board E has issued a white pattern of internal signals.
- Unit of voltage values is V (volt).
- For other modes, see the respective circuit diagrams.
- : Measurement disabled
- V : B+ line
- V : B− line
  (Actual measured value may be different).
- Round numerals indicate Waveform Table No.

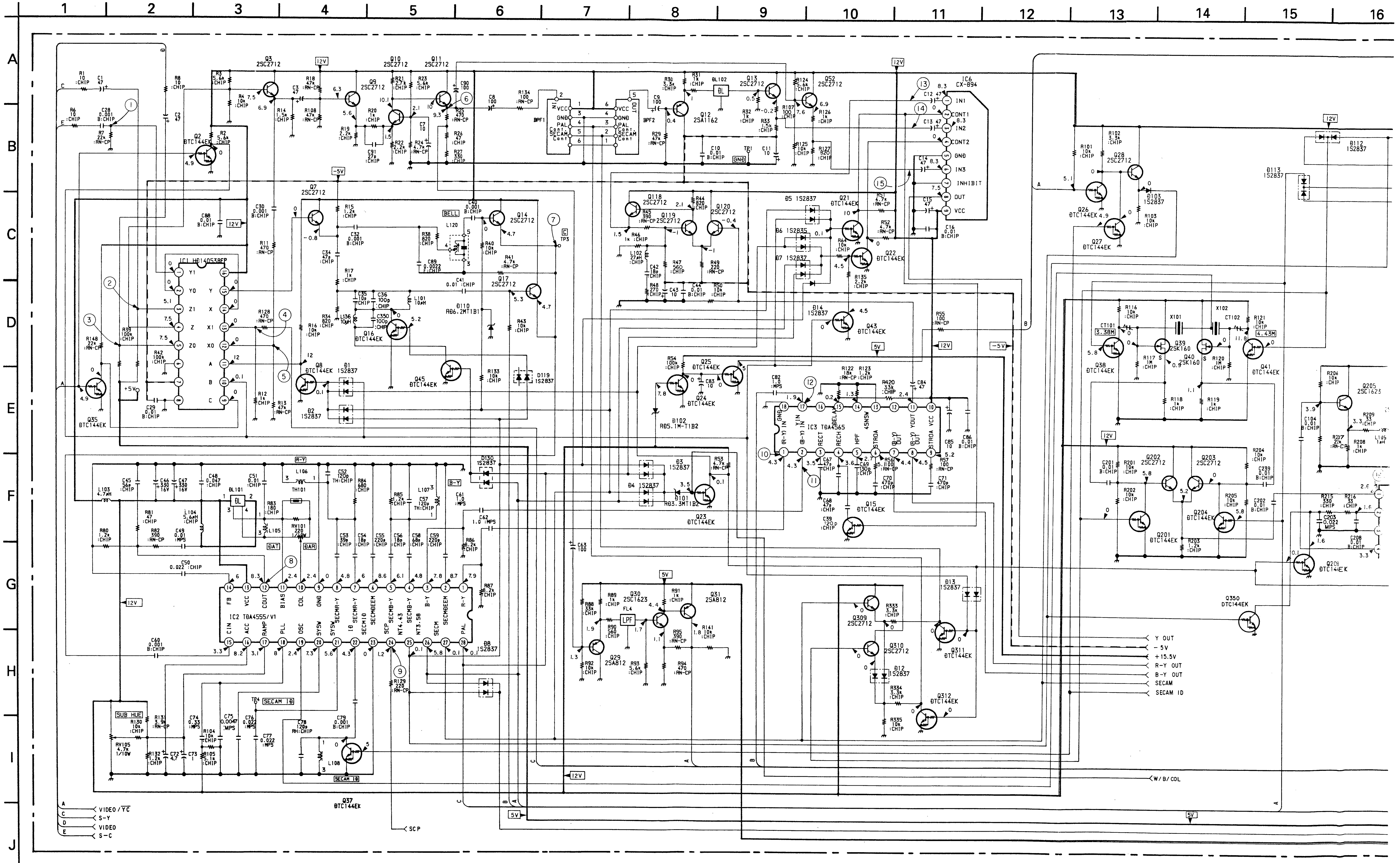
Reference information

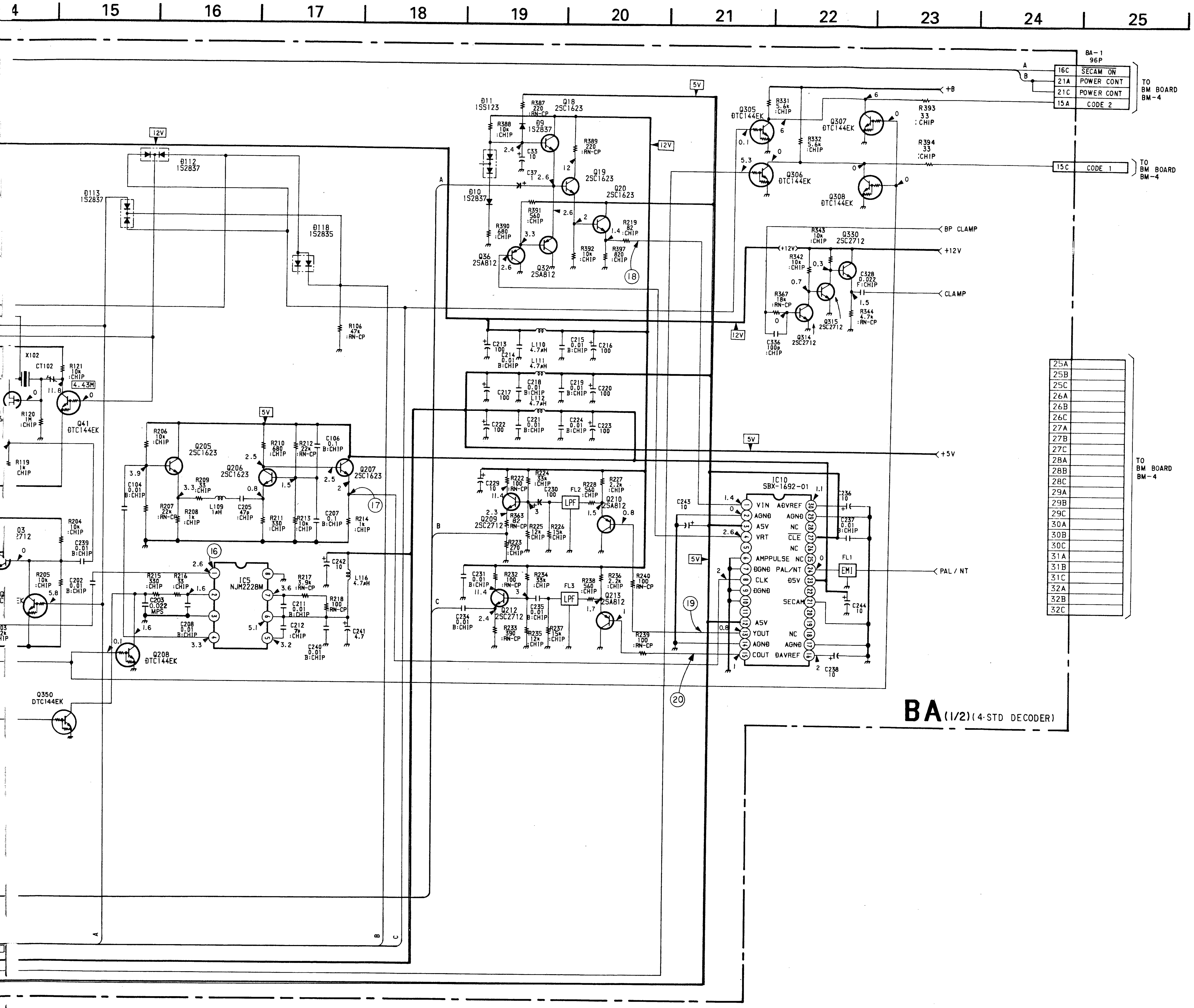
RESISTOR	:	RN	METAL FILM
	:	RC	SOLID
	:	FPRD	NONFLAMMABLE CARBON
	:	FUSE	NONFLAMMABLE FUSIBLE
	:	RS	NONFLAMMABLE METAL OXIDE
	:	RB	NONFLAMMABLE CEMENT
	:	RW	NONFLAMMABLE WIREWOUND
	:	※	ADJUSTMENT RESISTOR
COIL	:	LF-8L	MICRO INDUCTOR
CAPACITOR	:	TA	TANTALUM
	:	PS	STYROL
	:	PP	POLYPROPYLENE
	:	PT	MYLAR
	:	MPS	METALIZED POLYESTER
	:	MPP	METALIZED POLYPROPYLENE
	:	ALB	BIPOLAR
	:	ALT	HIGH TEMPERATURE
	:	ALR	HIGH RIPPLE

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

BA BOARD (1/2) (Page 167 – 171)

BA


IC1 HD14053BFP
IC2 TDA4555/V1
IC3 TDA4565
IC6 CX-894
IN1
CONT1
IN2
CONT2
GND
IN3
INHIBIT
OUT
VCC
BPF1
BPF2
BELL
LPF
SUB HUE
SECAM ID
R-Y
B-Y
DAT
DAR
12V
-5V
5V
+5V
Y OUT
-5V
+15.5V
R-Y OUT
B-Y OUT
SECAM
SECAM ID
W/B/COL
VIDEO/YC
S-Y
VIDEO
S-C
SCP
TP3
TP4
Q35 DTC144EK
Q2 DTC144EK
Q3 2SC2712
Q7 2SC2712
Q8 DTC144EK
Q9 2SC2712
Q10 2SC2712
Q11 2SC2712
Q12 2SA1162
Q13 2SC2712
Q14 2SC2712
Q16 DTC144EK
Q17 2SC2712
Q21 DTC144EK
Q22 DTC144EK
Q23 DTC144EK
Q24 DTC144EK
Q25 DTC144EK
Q26 DTC144EK
Q27 DTC144EK
Q28 2SC2712
Q29 2SA812
Q30 2SC1623
Q31 2SA812
Q37 DTC144EK
Q38 DTC144EK
Q39 2SK160
Q40 2SK160
Q41 DTC144EK
Q43 DTC144EK
Q45 DTC144EK
Q52 2SC2712
Q118 2SC2712
Q119 2SC2712
Q120 2SC2712
Q201 DTC144EK
Q202 2SC2712
Q203 2SC2712
Q204 DTC144EK
Q205 2SC1623
Q309 2SC2712
Q310 2SC2712
Q311 DTC144EK
Q312 DTC144EK
Q350 DTC144EK
X101
X102
CT101 3.38M
CT102 4.43M
D110 RD6.2M-T1B1
D101 RD3.3M-T1B2
D102 RD5.1M-T1B2
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

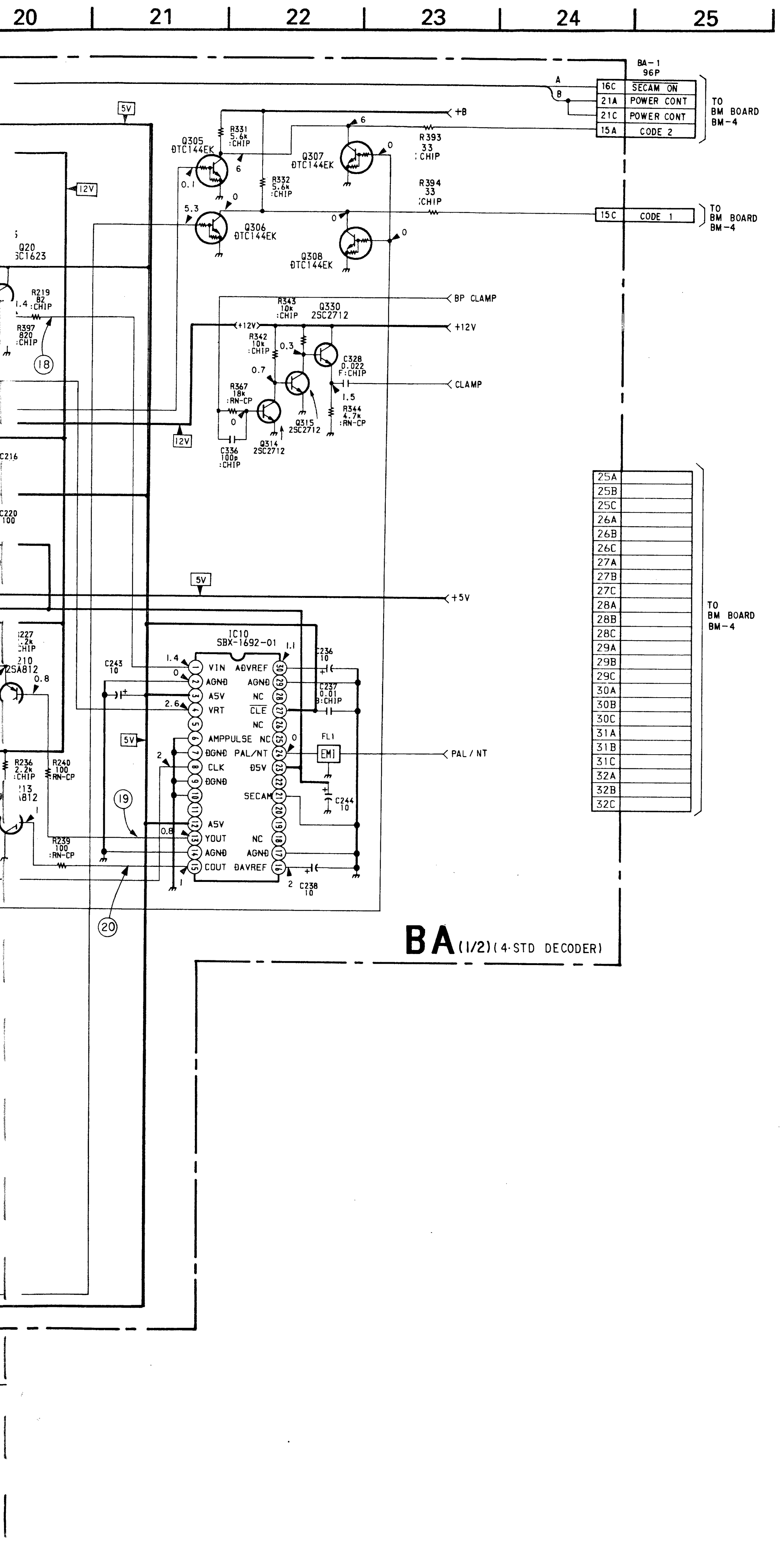


BA (1/2)	IC1	HD14053BFP	SYSTEM SW-1	201	DTC144EK	NT/PAL Y AMP-1
	2	TDA4555/V1	DECODER	202	2SC2712	CLK BUFF-3
	3	TDA4565	TRANSIENT	203	2SC2712	CLK BUFF-4
	5	NJM2228M	IMPROVE	204	DTC144EK	PAL CLK SW
	6	CX-894	CLK GEN	205	2SC1623	CLK AMP-1
	10	SBX1692-01	VIDEO AMP	206	2SC1623	CLK AMP-2
			COMB FILTER	207	2SC1623	CLK AMP-3
	Q2	DTC144EK		208	DTC144EK	GEN SW
	3	2SC2712	MODE SW-1	209	2SC2712	NT/PAL Y BUFF-2
	7	2SC2712	VIDEO BUFF-1	210	2SA812	NT/PAL Y BUFF-1
	8	DTC144EK	C BUFF	212	2SC1712	NT/PAL C BUFF-2
	9	2SC2712	MODE SW-1	213	2SA812	NT/PAL C BUFF-1
	10	2SC2712	VIDEO AMP-1	305	DTC144EK	CODE 2 SW-1
	11	2SC2712	VIDEO AMP-2	306	DTC144EK	CODE 1 SW-1
	12	2SA1162	VIDEO AMP-3	307	DTC144EK	CODE SW-2
	13	2SC2712	Y BUFF-1	308	DTC144EK	CODE SW-2
	14	2SC2712	Y BUFF-2	309	2SC2712	NT3.58 SW
	15	DTC144EK	SECAM C BUFF	310	2SC2712	NT4.43 SW
	16	DTC144EK	MODE SW-10	311	DTC144EK	TRAP SW
	17	2SC2712	C FILTER SW	312	DTC144EK	TRAP SW
	18	2SC1623	NT/PAL C BUFF	314	2SC2712	CLAMP BUFF-1
	19	2SC1623	CLAMP-4	315	2SC2712	CLAMP BUFF-2
	20	2SC1623	CLAMP-6	330	2SC2712	CLAMP BUFF-3
	21	DTC144EK	NT/PAL VIDEO BUFF	350	DTC144ES	GEN SW
	22	DTC144EK	Y MODE SW-6			
	23	DTC144EK	Y MODE SW-7	D1	1S2837	SYSTEM DET-1
	24	DTC144EK	B/W SW-4	2	1S2837	SYSTEM DET-2
	25	DTC144EK	POWER CONT-1	3	1S2837	B/W SW-1
	26	DTC144EK	POWER CONT-2	4	1S2837	B/W SW-2
	27	DTC144EK	SECAM SW-1	5	1S2837	Y MODE SW-1
	28	2SC2712	SECAM SW-2	6	1S2835	Y MODE SW-2
	29	2SA812	SECAM SW-3	7	1S2837	Y MODE SW-3
	30	2SC1623	NT/PAL VIDEO	8	1S2837	MODE SW-3
	31	2SA812	BUFF-1	9	1S2837	CLAMP-3
	32	2SA812	NT/PAL VIDEO AMP-1	10	1S2837	CLAMP-2
	35	DTC144EK	NT/PAL VIDEO AMP-2	11	1SS123	CLAMP-1
	36	2SA812	CLAMP-5	12	1S2837	NT3.58 DET
	37	DTC144EK	MODE SW-2	13	1S2837	MODE SW-11
	38	DTC144EK	CLAMP	14	1S2837	Y MODE SW-4
	39	2SK160	ID	101	RD3.3M-B2	B/W SW-3
	40	2SK160	NT OSC SW	102	RD5.1M-B2	POWER CONT
	41	DTC144EK	NT CLK BUFF-1	103	1S2837	SECAM SW-4
	43	DTC144EK	PAL CLK BUFF-2	110	RD6.2M-B1	SECAM SW
	45	DTC144EK	PAL OSC SW	112	1S2837	MODE SW-4
	52	2SC2712	Y MODE SW-5	113	1S2837	MODE SW-5
	118	2SC2712	C FILTER SW	118	1S2835	MODE SW-6
	119	2SC2712	VIDEO BUFF-2	119	1S2837	C FILTER SW
	120	2SC2712	NT/PAL Y AMP-3	130	1S2837	C FILTER SW

BA BOARD (1/2)

REF	Pin No.	NTSC 3.58	PAL	SECAM	NTSC 4.43
IC1	②	0	0	− 0.7	− 0.7
	⑪	12	12	0	0
	⑫	0	0	− 0.7	− 0.7
	⑭	0	0	− 0.7	− 0.7
	⑮	0	0	− 0.7	− 0.7
IC2	⑤	6.1	5.8	4.2	7.6
	⑦	6	5.5	4.2	7.3
	⑲	2.4	2.4	5.6	2.4
	⑳	7.5	5.7	5.7	7.5
	㉑	5.6	7.7	6.8	5.6
	㉕	0.1	0.1	0.1	5.8
	㉖	5.8	0.1	0.1	0.1
	㉗	0.1	0.1	5.8	0.1
	㉘	0.1	5.8	0.1	0.1
IC6	②	10	0	0	10
	④	0	10	10	0
IC10	㉔	0	3.6	3.6	0

REF		NTSC 3.58	PAL	SECAM	NTSC 4.43	REF		NTSC 3.58	PAL	SECAM	NTSC 4.43
Q7	B	0	0	− 0.8	− 0.8	Q202	B	5.8	0	5.6	0
	C	–	–	–	–		C	–	–	–	–
	E	− 0.8	− 0.8	− 1.4	− 1.4		E	5.2	5.1	5.2	5.1
Q8	B	0.1	0.1	5.3	5.3	Q203	B	0	5.8	5.8	5.8
	C	12	12	0	0		C	–	–	–	–
	E	–	–	–	–		E	5.2	5.1	5.2	5.1
Q16	B	5.2	0.2	0.2	5.2	Q204	B	5.8	0	0	0
	C	0	3.5	1.5	0		C	0	5.8	5.8	5.8
	E	–	–	–	–		E	–	–	–	–
Q17	B	5.3	5.3	0.2	5.3	Q305	B	0.1	5.8	0.1	0.1
	C	4.7	4.7	5	4.7		C	6	0	6	6
	E	–	–	–	–		E	–	–	–	–
Q21	B	0.1	0.1	5.3	5.3	Q306	B	5.3	0.1	0.1	5.3
	C	0	0	0	0		C	0	6	6	0
	E	–	–	–	–		E	–	–	–	–
Q22	B	4.5	4.5	0.5	0.5	Q307	B	0	0	0	0
	C	0	0	10	10		C	6	0	6	6
	E	–	–	–	–		E	–	–	–	–
Q27	B	4.9	0	0	4.9	Q308	B	0	0	0	0
	C	0	0	0	0		C	0	6	6	6
	E	–	–	–	–		E	–	–	–	–
Q37	B	5	0	0	5	Q309	B	0	0	5.7	0
	C	0	0	0	0		C	–	–	–	–
	E	–	–	–	–		E	0	0	5.1	0
Q38	B	5.7	0	0	0	Q310	B	0	5.1	0	5.1
	C	0	11.7	11.7	11.7		C	–	–	–	–
	E	–	–	–	–		E	0	4.5	1.4	4.5
Q41	B	0	5.9	0	5.1	Q311	B	0	0.5	0.2	0.5
	C	11.8	0	11.8	0		C	0	0	3.8	2.8
	E	–	–	–	–		E	–	–	–	–
Q43	B	0	0	0	0	Q312	B	0	0.5	0.2	0.5
	C	4.5	4.5	0.5	0.5		C	0	2.8	3.2	2.8
	E	–	–	–	–		E	–	–	–	–
Q201	B	0	5.2	0	5.2						
	C	5.8	0	5.8	0						
	E	–	–	–	–						


20
21
22
23
24
25
BA-1
96P
16C SECAM ON
21A POWER CONT
21C POWER CONT
15A CODE 2
15C CODE 1
TO
BM BOARD
BM-4
A
B
+B
5V
12V
Q305
DTC144EK
Q306
DTC144EK
Q307
DTC144EK
Q308
DTC144EK
R331
5.6k
:CHIP
R332
5.6k
:CHIP
R393
33
:CHIP
R394
33
:CHIP
Q20
2SC1623
R219
82
:CHIP
R397
820
:CHIP
(18)
BP CLAMP
+12V
CLAMP
R343
10k
:CHIP
Q330
2SC2712
R342
10k
:CHIP
R367
18k
:RN-CP
C328
0.022
F:CHIP
R344
4.7k
:RN-CP
Q315
2SC2712
Q314
2SC2712
C336
100p
:CHIP
C216
C220
100
+5V
IC10
SBX-1692-01
VIN
AGND
A5V
VRT
AMPPULSE
DGND
CLK
DGND
A5V
YOUT
AGND
COUT
ADVREF
AGND
NC
CLE
NC
NC
PAL/NT
D5V
SECAM
NC
AGND
DAVREF
C243
10
C236
10
C237
0.01
B:CHIP
FL1
EMI
C244
10
C238
10
PAL / NT
R227
2.2k
:CHIP
Q210
2SA812
R236
2.2k
:CHIP
R240
100
:RN-CP
Q213
2SA812
R239
100
:RN-CP
(19)
(20)
25A
25B
25C
26A
26B
26C
27A
27B
27C
28A
28B
28C
29A
29B
29C
30A
30B
30C
31A
31B
31C
32A
32B
32C
BA (1/2) (4-STD DECODER)

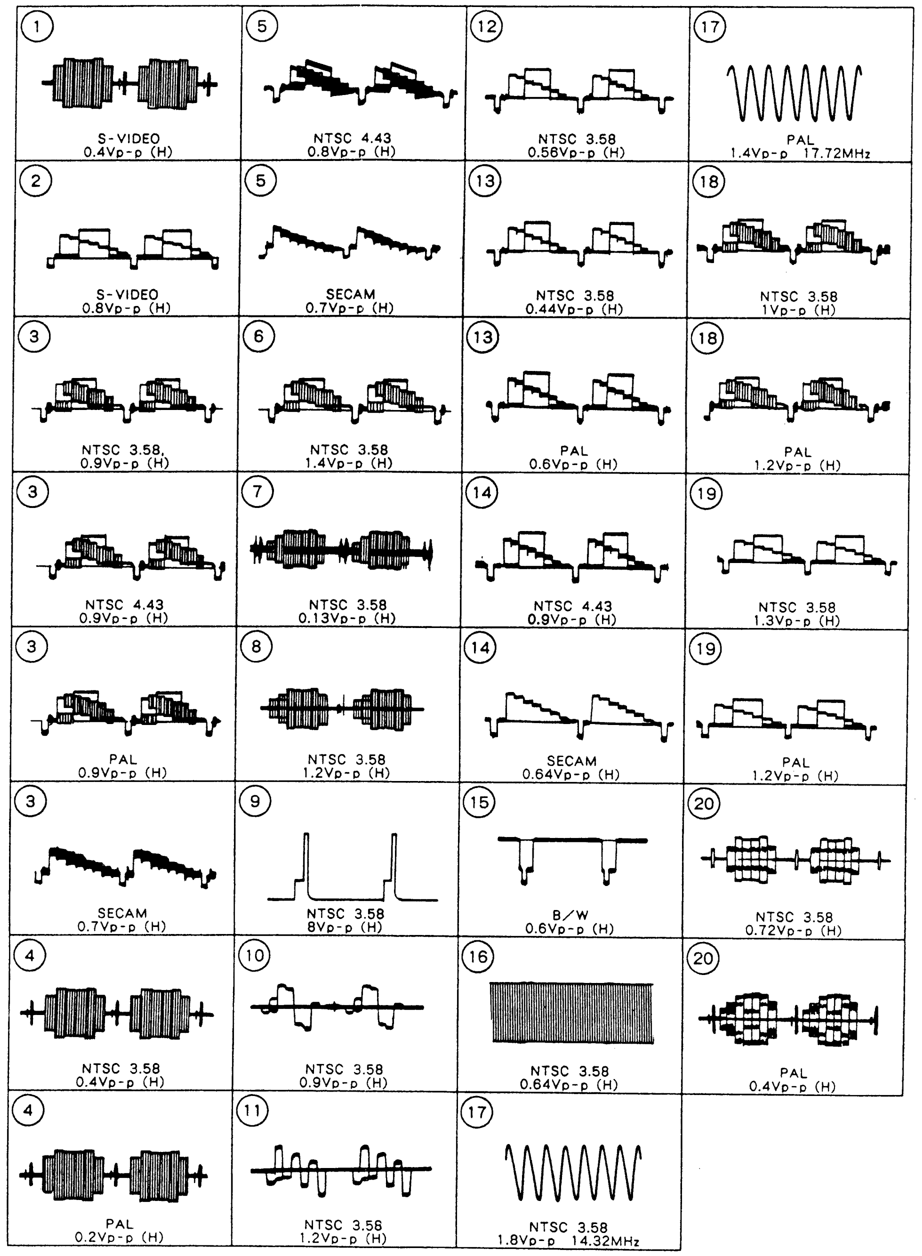
BA (1/2)	IC1	HD14053BFP	SYSTEM SW-1	201	DTC144EK	NT/PAL Y AMP-1
	2	TDA4555/V1	DECODER	202	2SC2712	CLK BUFF-3
	3	TDA4565	TRANSIENT	203	2SC2712	CLK BUFF-4
	5	NJM2228M	IMPROVE	204	DTC144EK	PAL CLK SW
	6	CX-894	CLK GEN	205	2SC1623	CLK AMP-1
	10	SBX1692-01	VIDEO AMP	206	2SC1623	CLK AMP-2
			COMB FILTER	207	2SC1623	CLK AMP-3
	Q2	DTC144EK		208	DTC144EK	GEN SW
	3	2SC2712	MODE SW-1	209	2SC2712	NT/PAL Y BUFF-2
	7	2SC2712	VIDEO BUFF-1	210	2SA812	NT/PAL Y BUFF-1
	8	DTC144EK	C BUFF	212	2SC1712	NT/PAL C BUFF-2
	9	2SC2712	MODE SW-1	213	2SA812	NT/PAL C BUFF-1
	10	2SC2712	VIDEO AMP-1	305	DTC144EK	CODE 2 SW-1
	11	2SC2712	VIDEO AMP-2	306	DTC144EK	CODE 1 SW-1
	12	2SA1162	VIDEO AMP-3	307	DTC144EK	CODE SW-2
	13	2SC2712	Y BUFF-1	308	DTC144EK	CODE SW-2
	14	2SC2712	Y BUFF-2	309	2SC2712	NT3.58 SW
	15	DTC144EK	SECAM C BUFF	310	2SC2712	NT4.43 SW
	16	DTC144EK	MODE SW-10	311	DTC144EK	TRAP SW
	17	2SC2712	C FILTER SW	312	DTC144EK	TRAP SW
	18	2SC1623	NT/PAL C BUFF	314	2SC2712	CLAMP BUFF-1
	19	2SC1623	CLAMP-4	315	2SC2712	CLAMP BUFF-2
	20	2SC1623	CLAMP-6	330	2SC2712	CLAMP BUFF-3
	21	DTC144EK	NT/PAL VIDEO BUFF	350	DTC144ES	GEN SW
	22	DTC144EK	Y MODE SW-6			
	23	DTC144EK	Y MODE SW-7	D1	1S2837	SYSTEM DET-1
	24	DTC144EK	B/W SW-4	2	1S2837	SYSTEM DET-2
	25	DTC144EK	POWER CONT-1	3	1S2837	B/W SW-1
	26	DTC144EK	POWER CONT-2	4	1S2837	B/W SW-2
	27	DTC144EK	SECAM SW-1	5	1S2837	Y MODE SW-1
	28	2SC2712	SECAM SW-2	6	1S2835	Y MODE SW-2
	29	2SA812	SECAM SW-3	7	1S2837	Y MODE SW-3
	30	2SC1623	NT/PAL VIDEO	8	1S2837	MODE SW-3
	31	2SA812	BUFF-1	9	1S2837	CLAMP-3
	32	2SA812	NT/PAL VIDEO AMP-1	10	1S2837	CLAMP-2
	35	DTC144EK	NT/PAL VIDEO AMP-2	11	1SS123	CLAMP-1
	36	2SA812	CLAMP-5	12	1S2837	NT3.58 DET
	37	DTC144EK	MODE SW-2	13	1S2837	MODE SW-11
	38	DTC144EK	CLAMP	14	1S2837	Y MODE SW-4
	39	2SK160	ID	101	RD3.3M-B2	B/W SW-3
	40	2SK160	NT OSC SW	102	RD5.1M-B2	POWER CONT
	41	DTC144EK	NT CLK BUFF-1	103	1S2837	SECAM SW-4
	43	DTC144EK	PAL CLK BUFF-2	110	RD6.2M-B1	SECAM SW
	45	DTC144EK	PAL OSC SW	112	1S2837	MODE SW-4
	52	2SC2712	Y MODE SW-5	113	1S2837	MODE SW-5
	118	2SC2712	C FILTER SW	118	1S2835	MODE SW-6
	119	2SC2712	VIDEO BUFF-2	119	1S2837	C FILTER SW
	120	2SC2712	NT/PAL Y AMP-3	130	1S2837	C FILTER SW

BA BOARD (1/2)

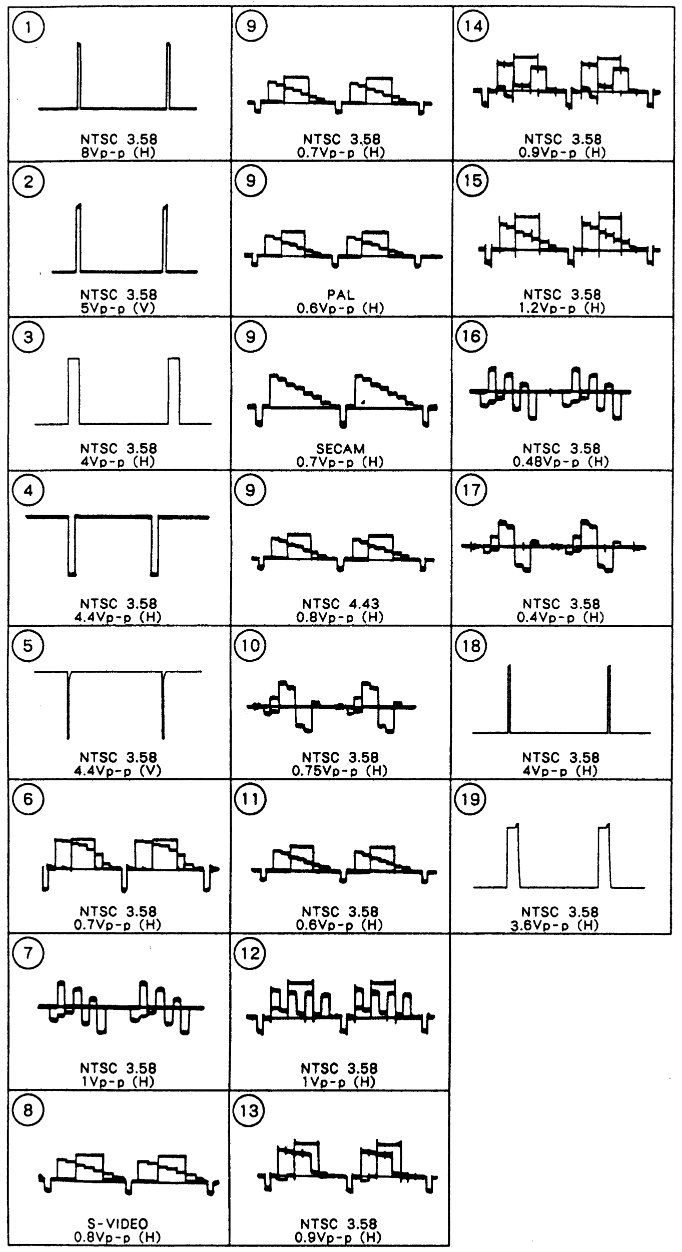
REF	Pin No.	NTSC 3.58	PAL	SECAM	NTSC 4.43
IC1	②	0	0	– 0.7	– 0.7
	⑪	12	12	0	0
	⑫	0	0	– 0.7	– 0.7
	⑭	0	0	– 0.7	– 0.7
	⑮	0	0	– 0.7	– 0.7
IC2	⑤	6.1	5.8	4.2	7.6
	⑦	6	5.5	4.2	7.3
	⑲	2.4	2.4	5.6	2.4
	⑳	7.5	5.7	5.7	7.5
	㉑	5.6	7.7	6.8	5.6
	㉕	0.1	0.1	0.1	5.8
	㉖	5.8	0.1	0.1	0.1
	㉗	0.1	0.1	5.8	0.1
	㉘	0.1	5.8	0.1	0.1
IC6	②	10	0	0	10
	④	0	10	10	0
IC10	㉔	0	3.6	3.6	0

REF		NTSC 3.58	PAL	SECAM	NTSC 4.43	REF		NTSC 3.58	PAL	SECAM	NTSC 4.43
Q7	B	0	0	– 0.8	– 0.8	Q202	B	5.8	0	5.8	0
	C	–	–	–	–		C	–	–	–	–
	E	– 0.8	– 0.8	– 1.4	– 1.4		E	5.2	5.1	5.2	5.1
Q8	B	0.1	0.1	5.3	5.3	Q203	B	0	5.8	5.8	5.8
	C	12	12	0	0		C	–	–	–	–
	E	–	–	–	–		E	5.2	5.1	5.2	5.1
Q16	B	5.2	0.2	0.2	5.2	Q204	B	5.8	0	0	0
	C	0	3.5	1.5	0		C	0	5.8	5.8	5.8
	E	–	–	–	–		E	–	–	–	–
Q17	B	5.3	5.3	0.2	5.3	Q305	B	0.1	5.8	0.1	0.1
	C	4.7	4.7	5	4.7		C	6	0	6	6
	E	–	–	–	–		E	–	–	–	–
Q21	B	0.1	0.1	5.3	5.3	Q306	B	5.3	0.1	0.1	5.3
	C	0	0	0	0		C	0	6	6	0
	E	–	–	–	–		E	–	–	–	–
Q22	B	4.5	4.5	0.5	0.5	Q307	B	0	0	0	0
	C	0	0	10	10		C	6	0	6	6
	E	–	–	–	–		E	–	–	–	–
Q27	B	4.9	0	0	4.9	Q308	B	0	0	0	0
	C	0	0	0	0		C	0	6	6	6
	E	–	–	–	–		E	–	–	–	–
Q37	B	5	0	0	5	Q309	B	0	0	5.7	0
	C	0	0	0	0		C	–	–	–	–
	E	–	–	–	–		E	0	0	5.1	0
Q38	B	5.7	0	0	0	Q310	B	0	5.1	0	5.1
	C	0	11.7	11.7	11.7		C	–	–	–	–
	E	–	–	–	–		E	0	4.5	1.4	4.5
Q41	B	0	5.9	0	5.1	Q311	B	0	0.5	0.2	0.5
	C	11.8	0	11.8	0		C	0	0	3.8	2.8
	E	–	–	–	–		E	–	–	–	–
Q43	B	0	0	0	0	Q312	B	0	0.5	0.2	0.5
	C	4.5	4.5	0.5	0.5		C	0	2.8	3.2	2.8
	E	–	–	–	–		E	–	–	–	–
Q201	B	0	5.2	0	5.2						
	C	5.8	0	5.8	0						
	E	–	–	–	–						

BA BOARD (1/2) WAVEFORMS



BA BOARD (2/2) WAVEFORMS


①
NTSC 3.58 8Vp-p (H)
⑨
NTSC 3.58 0.7Vp-p (H)
⑭
NTSC 3.58 0.9Vp-p (H)
②
NTSC 3.58 5Vp-p (V)
⑨
PAL 0.6Vp-p (H)
⑮
NTSC 3.58 1.2Vp-p (H)
③
NTSC 3.58 4Vp-p (H)
⑨
SECAM 0.7Vp-p (H)
⑯
NTSC 3.58 0.48Vp-p (H)
④
NTSC 3.58 4.4Vp-p (H)
⑨
NTSC 4.43 0.8Vp-p (H)
⑰
NTSC 3.58 0.4Vp-p (H)
⑤
NTSC 3.58 4.4Vp-p (V)
⑩
NTSC 3.58 0.75Vp-p (H)
⑱
NTSC 3.58 4Vp-p (H)
⑥
NTSC 3.58 0.7Vp-p (H)
⑪
NTSC 3.58 0.6Vp-p (H)
⑲
NTSC 3.58 3.6Vp-p (H)
⑦
NTSC 3.58 1Vp-p (H)
⑫
NTSC 3.58 1Vp-p (H)
⑧
S-VIDEO 0.8Vp-p (H)
⑬
NTSC 3.58 0.9Vp-p (H)

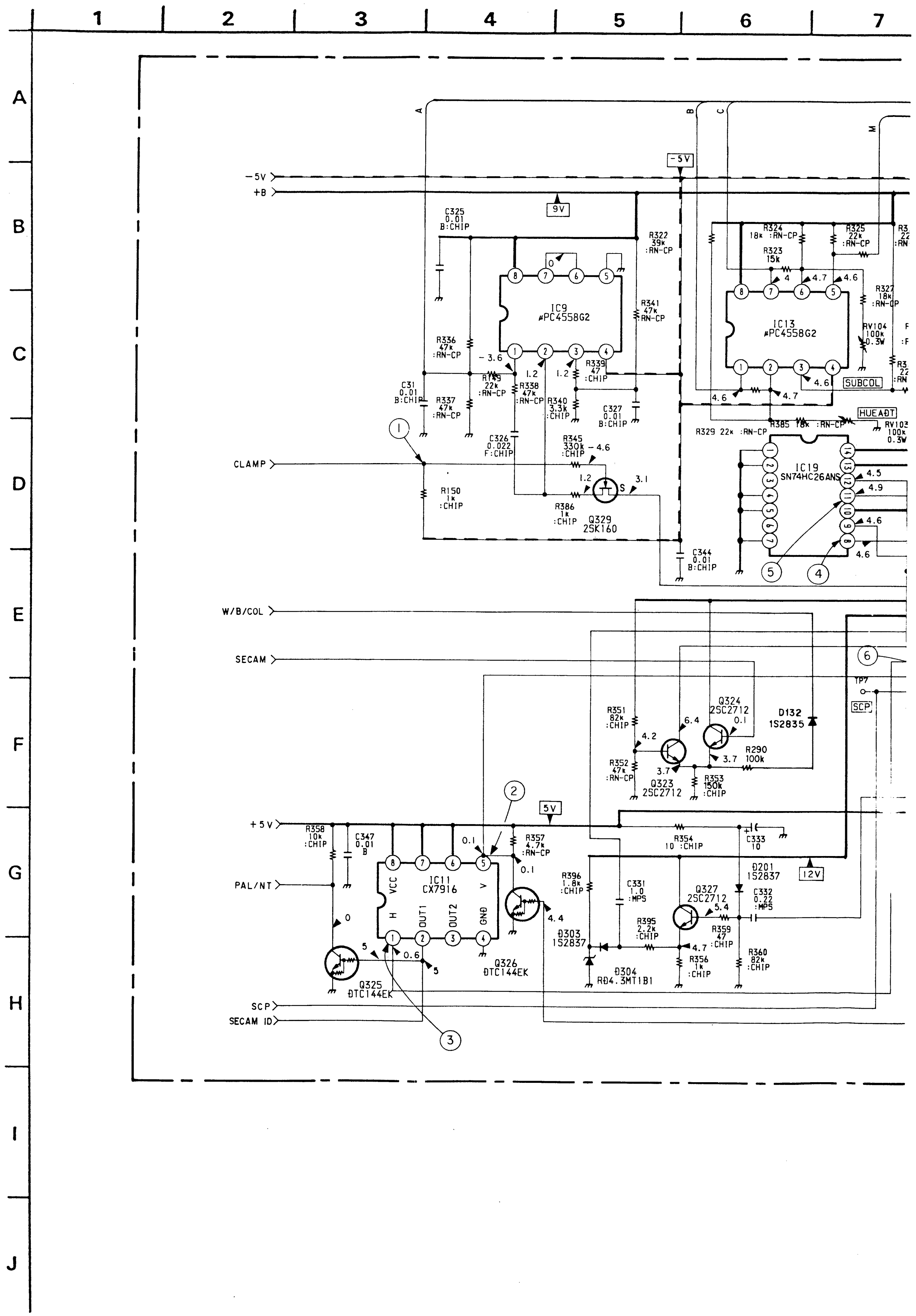
BA (2/2)	IC7	HD14053BFP	SYSTEM SW-2
	8	CXA1216P	MATRIX
	9	μPC4558G2	BRT CONT-2
	11	CX-7916	50/60 DET
	12	SNY-9202	SHARPNESS
	13	μPC4558G2	LEVEL SHIFT-1
	14	SN74LS12NS	MODE DET
	15	H8B7178B	JUNGLE
	16	LM7812CT	12V REG
	17	PQ05RF1	5V REG
	19	SN74HC126ANS	SYNC BUFF
	Q33	2SC2712	R-Y BUFF-1
	34	2SC2712	B-Y BUFF-1
	48	2SC2712	R-Y AMP-1
	49	2SC2712	R-Y AMP-2
	50	2SC2712	B-Y AMP-1
	51	2SC2712	B-Y AMP-2
	152	DTC144EK	SYSTEM MODE SW-2
	301	2SD774	9V REG
	302	2SC2712	BLK BUFF-1
	303	2SC2712	B-Y BUFF-2
	304	2SC2712	R-Y BUFF-2
	313	2SC2712	Y AMP-3
	316	DTC144EK	
	317	2SC2712	Y AMP-2
	318	2SC2712	Y AMP
	319	DTC144EK	MODE SW-7
	320	DTC144EK	MODE SW-8
	321	DTC144EK	MODE SW-9
	323	2SC2712	REF DC BUFF
	324	2SC2712	BGP SHIFT
	325	DTC144EK	50/60 SW
	326	DTC144EK	V SYNC SW
	327	2SC2712	Y CLAMP-2
	329	2SK160	BRT CONT-1
	336	2SC2712	Y AMP-6
	337	2SA812	Y AMP-5
	338	2SC2712	Y AMP-4
	340	DTC144EK	MODE DET
	D107	1S2837	BLK ADD-2
	108	V06C	+12V PROT
	109	V06C	+5V PROT
	117	1S2837	BLK ADD-1
	132	1S2835	
	201	1S2837	Y CLAMP-1
	301	1S2837	LEVEL SHIFT-2
	303	1S2837	Y LEVEL ADJ-2
	304	RD4.3M-B1	Y LEVEL ADJ-1

BA BOARD (2/2)

REF	Pin No.	NTSC 3.58	PAL	SECAM	NTSC 4.43
IC11	②	5	0	0	5

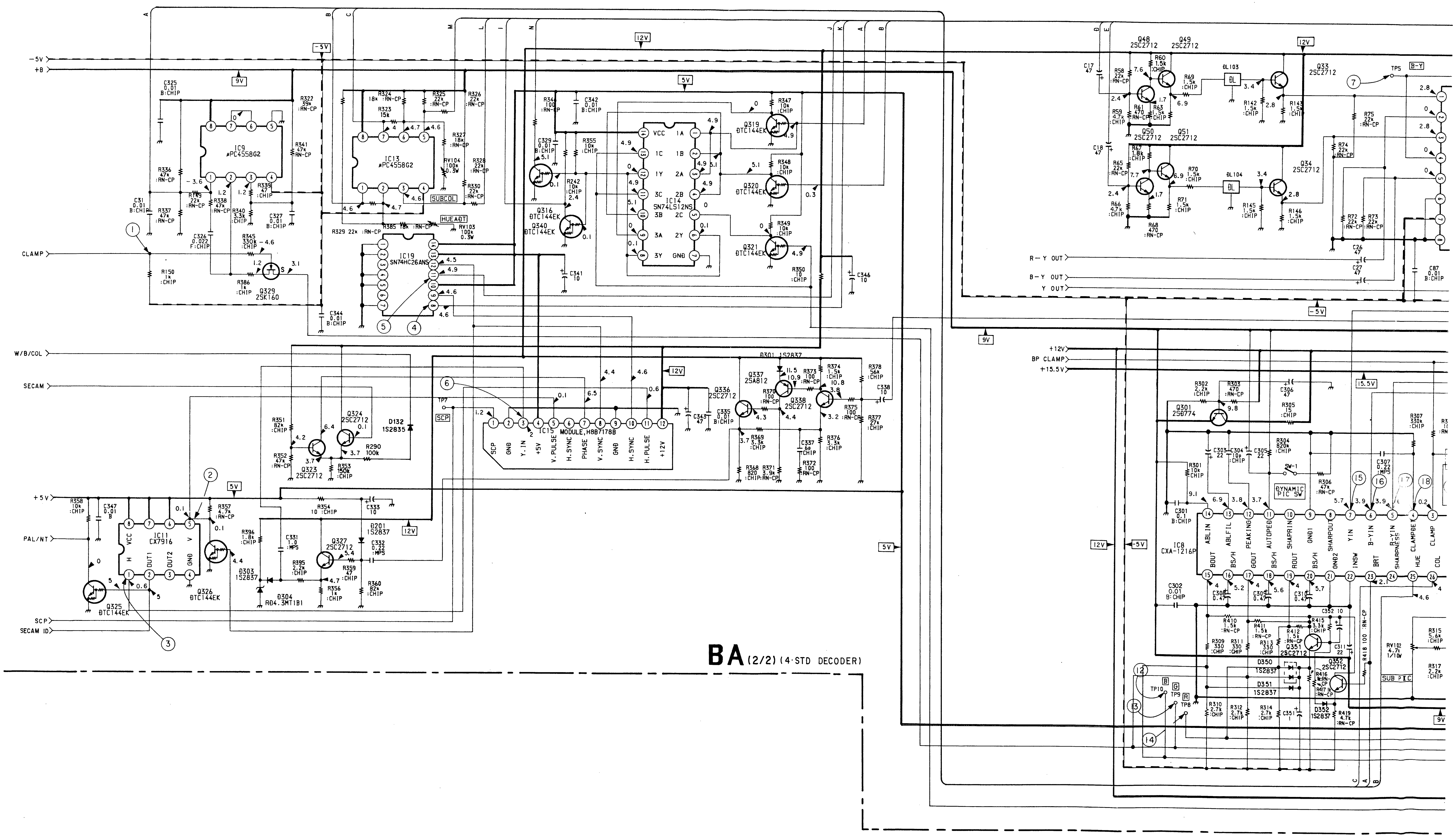
REF		NTSC 3.58	PAL	SECAM	NTSC 4.43
Q325	B	5	0	0	5
	C	0	3.6	3.6	0
	E	–	–	–	–

BA BOARD (2/2) (Page 172 – 176)

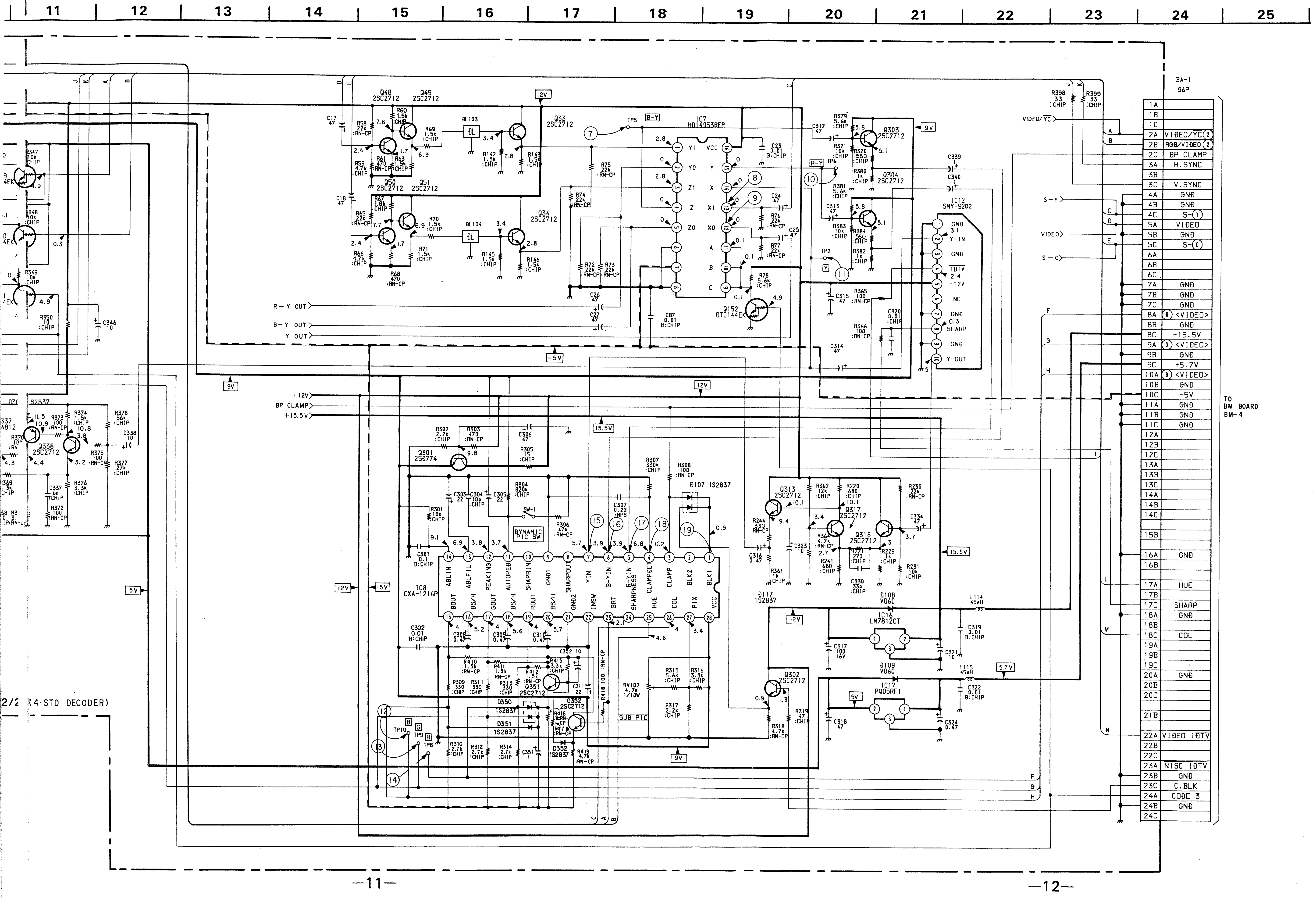

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
-5V
+B
-5V
9V
C325 0.01 B:CHIP
R322 39k :RN-CP
R324 18k :RN-CP
R323 15k
R325 22k :RN-CP
IC9 μPC4558G2
IC13 μPC4558G2
R341 47k :RN-CP
R327 18k :RN-CP
RV104 100k 0.3W
R336 47k :RN-CP
R139 22k :RN-CP
R338 47k :RN-CP
R339 47 :CHIP
R340 3.3k :CHIP
C327 0.01 B:CHIP
C31 0.01 B:CHIP
R337 47k :RN-CP
C326 0.022 F:CHIP
R345 330k :CHIP
SUBCOL
HUEADT
R385 18k :RN-CP
R329 22k :RN-CP
RV103 100k 0.3W
CLAMP
R150 1k :CHIP
R386 1k :CHIP
Q329 2SK160
IC19 SN74HC26ANS
C344 0.01 B:CHIP
W/B/COL
SECAM
TP7
SCP
R351 82k :CHIP
Q324 2SC2712
D132 1S2835
R290 100k
R352 47k :RN-CP
Q323 2SC2712
R353 150k :CHIP
5V
+5V
R358 10k :CHIP
C347 0.01 B
R357 4.7k :RN-CP
R354 10 :CHIP
C333 10
D201 1S2837
12V
PAL/NT
IC11 CX7916
VCC
H
OUT1
OUT2
GND
R396 1.8k :CHIP
C331 1.0 :MPS
Q327 2SC2712
C332 0.22 :MPS
Q326 DTC144EK
D303 1S2837
R395 2.2k :CHIP
R359 47 :CHIP
R356 1k :CHIP
R360 82k :CHIP
D304 RD4.3MT1B1
Q325 DTC144EK
SCP
SECAM ID
①
②
③
④
⑤
⑥

BA BOARD (2/2) (Page 172 – 176)

BA


-5V
+B
CLAMP
W/B/COL
SECAM
+5V
PAL/NT
SCP
SECAM ID
IC9 μPC4558G2
IC13 μPC4558G2
IC19 SN74HC26ANS
IC14 SN74LS12NS
IC15 MODULE,H8B7178B
IC11 CX7916
IC8 CXA-1216P
Q329 2SK160
Q316 DTC144EK
Q340 DTC144EK
Q319 DTC144EK
Q320 DTC144EK
Q321 DTC144EK
Q323 2SC2712
Q324 2SC2712
Q325 DTC144EK
Q326 DTC144EK
Q327 2SC2712
Q336 2SC2712
Q337 2SA812
Q338 2SC2712
Q301 2SB774
Q351 2SC2712
Q352 2SC2712
Q48 2SC2712
Q49 2SC2712
Q50 2SC2712
Q51 2SC2712
Q33 2SC2712
Q34 2SC2712
DL103
DL104
D132 1S2835
D301 1S2837
D303 1S2837
D304 RD4.3MT1B1
D201 1S2837
D350 1S2837
D351 1S2837
D352 1S2837
RV103
RV104
RV102
SUBCOL
HUEADJ
SCP
TP7
TP5
B-Y
TP8
TP9
TP10
R-Y OUT
B-Y OUT
Y OUT
+12V
BP CLAMP
+15.5V
DYNAMIC PIC SW
SW-1
SUB PIC
12V
9V
5V
-5V
15.5V
SCP
GND
Y.IN
+5V
V.PULSE
H.SYNC
PHASE
V.SYNC
GND
H.SYNC
H.PULSE
+12V
ABLIN
ABLFIL
PEAKING
AUTOPED
SHARPIN
GND1
SHARPOUT
YIN
B-YIN
R-YIN
CLAMPBE
CLAMP
BOUT
BS/H
GOUT
BS/H
ROUT
BS/H
GND2
INSW
BRT
SHARPNESS
HUE
COL
① ② ③ ④ ⑤ ⑥ ⑦ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱

BA (2/2) (4-STD DECODER)


11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
—11—
—12—
2/2 (4·STD DECODER)
IC7 HD14053BFP
IC8 CXA-1216P
IC12 SNY-9202
IC16 LM7812CT
IC17 PQ05RF1
Q301 2SB774
Q302 2SC2712
Q303 2SC2712
Q304 2SC2712
Q313 2SC2712
Q317 2SC2712
Q318 2SC2712
Q33 2SC2712
Q34 2SC2712
Q48 2SC2712
Q49 2SC2712
Q50 2SC2712
Q51 2SC2712
Q338 2SC2712
Q351 2SC2712
Q352 2SC2712
Q152 DTC144EK
D107 1S2837
D117 1S2837
D350 1S2837
D351 1S2837
D352 1S2837
D108 V06C
D109 V06C
DL103
DL104
L114 45μH
L115 45μH
RV102 4.7k 1/10W
SUB PIC
DYNAMIC PIC SW
SW-1
TP2
TP5
TP6
TP8
TP9
TP10
R-Y OUT
B-Y OUT
Y OUT
+12V
BP CLAMP
+15.5V
VIDEO/YC
S-Y
VIDEO
S-C
BA-1 96P
TO BM BOARD BM-4
1A
1B
1C
2A VIDEO/YC 2
2B RGB/VIDEO 2
2C BP CLAMP
3A H.SYNC
3B
3C V.SYNC
4A GND
4B GND
4C S-(Y)
5A VIDEO
5B GND
5C S-(C)
6A
6B
6C
7A GND
7B GND
7C GND
8A (R) <VIDEO>
8B GND
8C +15.5V
9A (G) <VIDEO>
9B GND
9C +5.7V
10A (B) <VIDEO>
10B GND
10C -5V
11A GND
11B GND
11C GND
12A
12B
12C
13A
13B
13C
14A
14B
14C
15B
16A GND
16B
17A HUE
17B
17C SHARP
18A GND
18B
18C COL
19A
19B
19C
20A GND
20B
20C
21B
22A VIDEO IDTV
22B
22C
23A NTSC IDTV
23B GND
23C C.BLK
24A CODE 3
24B GND
24C
BLK1
BLK2
CLAMP
CLAMPOE
R-YIN
B-YIN
YIN
SHARPOUT
GND1
SHARPIN
AUTOPEO
PEAKING
ABLFIL
ABLIN
VCC
PIX
COL
HUE
SHARPNESS
BRT
INSW
GND2
BS/H
ROUT
GOUT
BOUT
Y-OUT
GND
SHARP
NC
+12V
IDTV
Y-IN

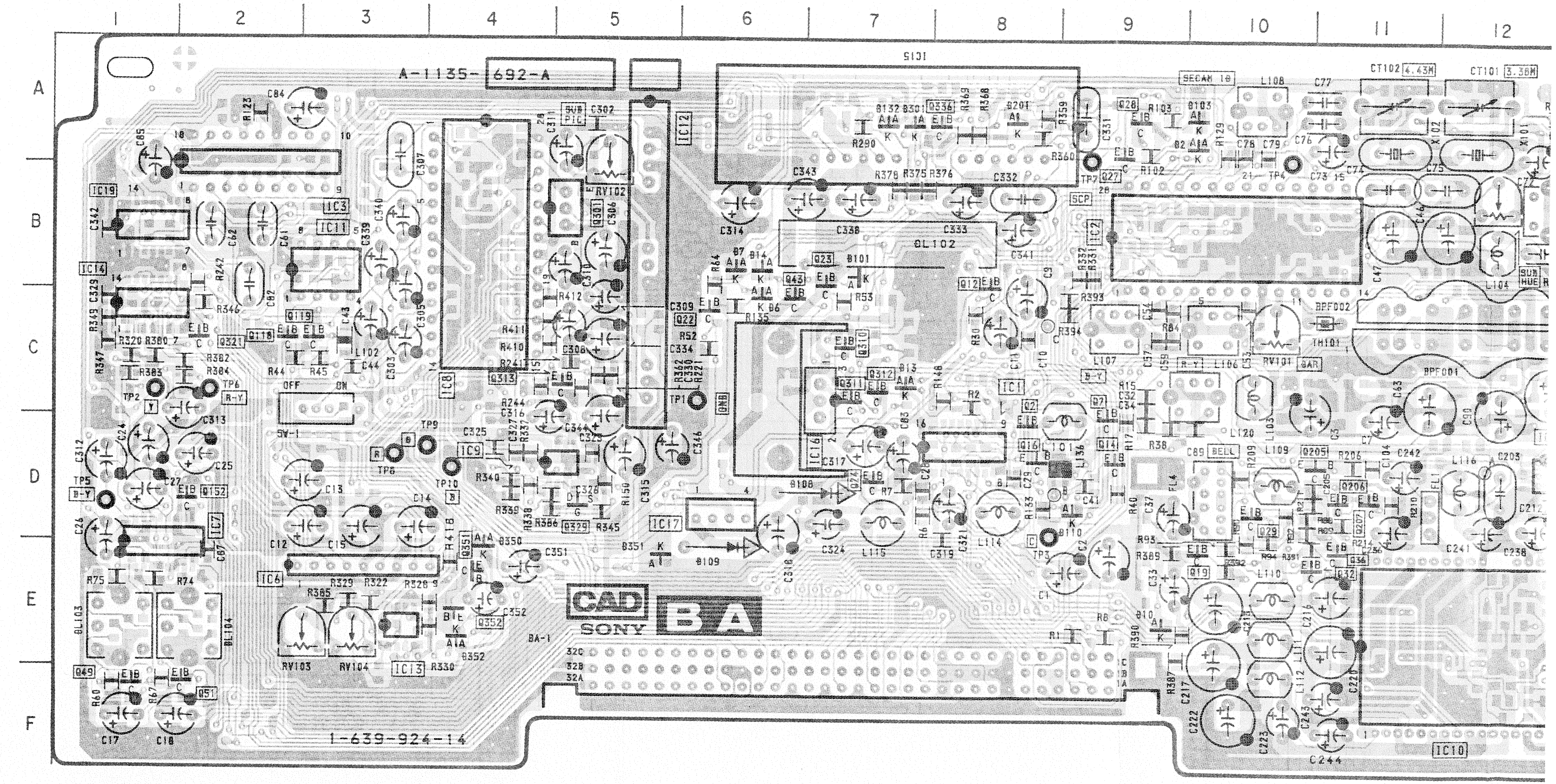
BA [4•STD DECODER]

BA BOARD
(COMPONENT SIDE)

IC	
IC1	C-6
IC2	B-8
IC3	A-2
IC5	C-10
IC6	D-2
IC7	D-1
IC8	B-3
IC9	C-3
IC10	D-9
IC11	B-2
IC12	B-4
IC13	D-3
IC14	B-1
IC15	A-6
IC16	C-5
IC17	C-5
IC19	B-1
TRANSISTOR	
Q2	C-6
Q7	C-7
Q12	B-6
Q14	C-7
Q16	C-6
Q19	D-7
Q22	B-4
Q23	B-5
Q24	C-5
Q27	A-7
Q28	A-7
Q29	C-8
Q32	D-8
Q36	D-8
Q43	B-5
Q49	D-1
Q51	D-1
Q118	B-2
Q119	B-2
Q152	C-1
Q205	C-8
Q206	C-8
Q207	C-8
Q301	B-4
Q310	B-5
Q311	B-5
Q312	B-6
Q313	C-3
Q321	B-1
Q329	C-4
Q336	A-6
DIODE	
D2	A-7
D6	B-5
D7	B-5
D10	D-7
D13	C-6
D14	B-5
D101	B-5
D103	A-7
D108	C-5
D109	D-5
D110	C-7
D132	A-6
D201	A-6
D301	A-6
VARIABLE RESISTOR	
CT101	A-9
CT102	A-9
RV101	B-8
RV102	A-4
RV103	D-2
RV104	D-2
RV105	B-10

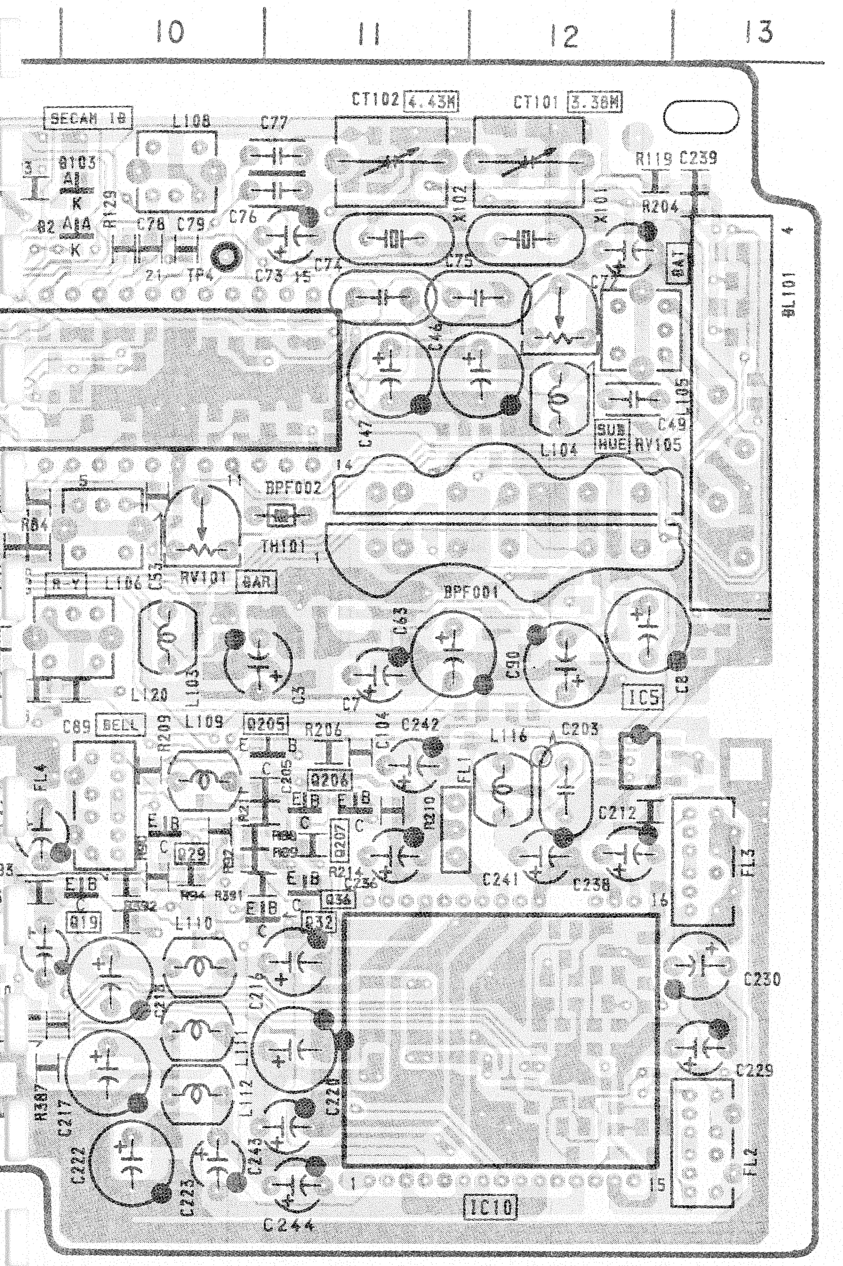
– **BA BOARD** – (COMPONENT SIDE) (Page 177 – 181)

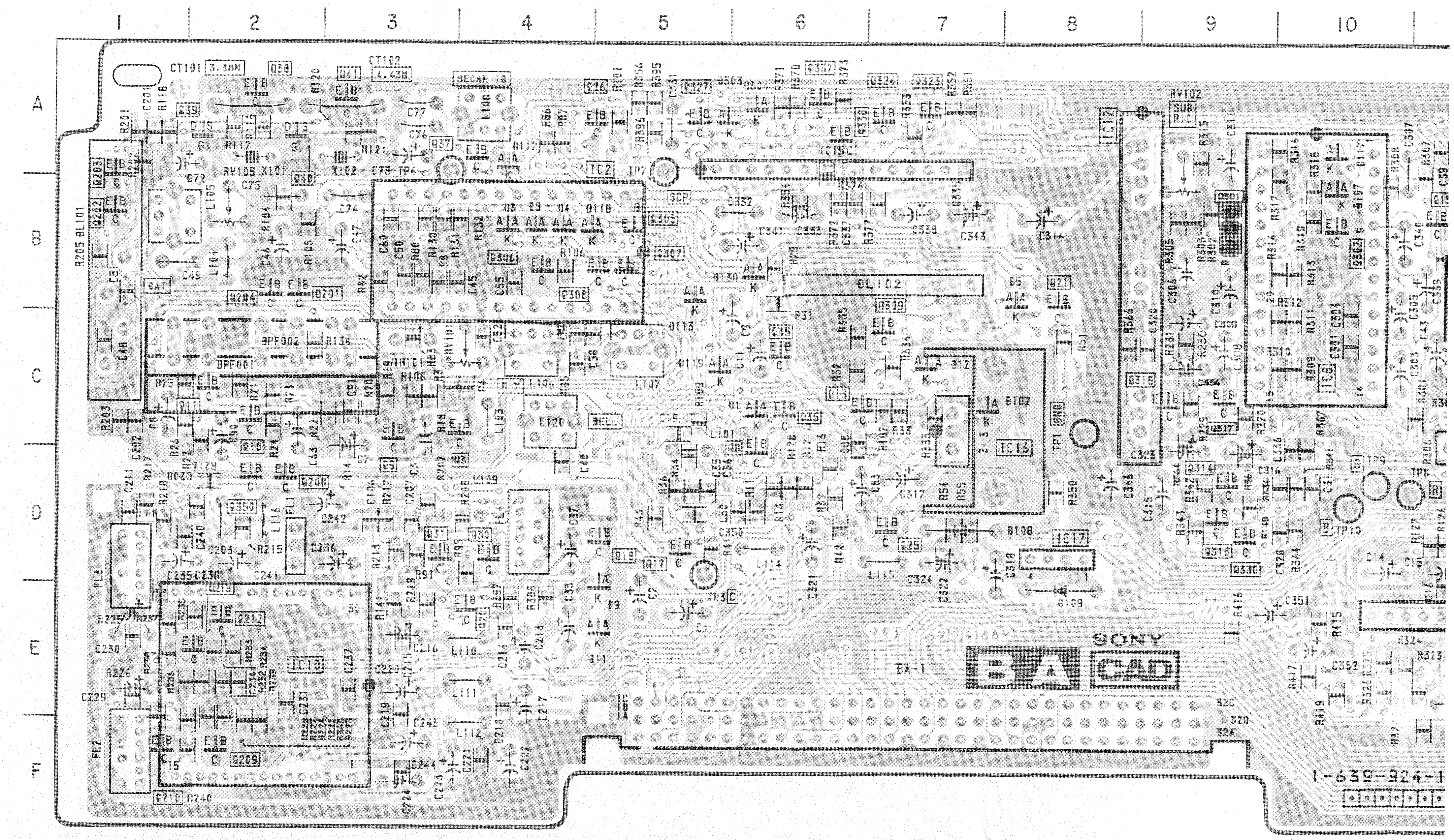
— COMPONENT SIDE —

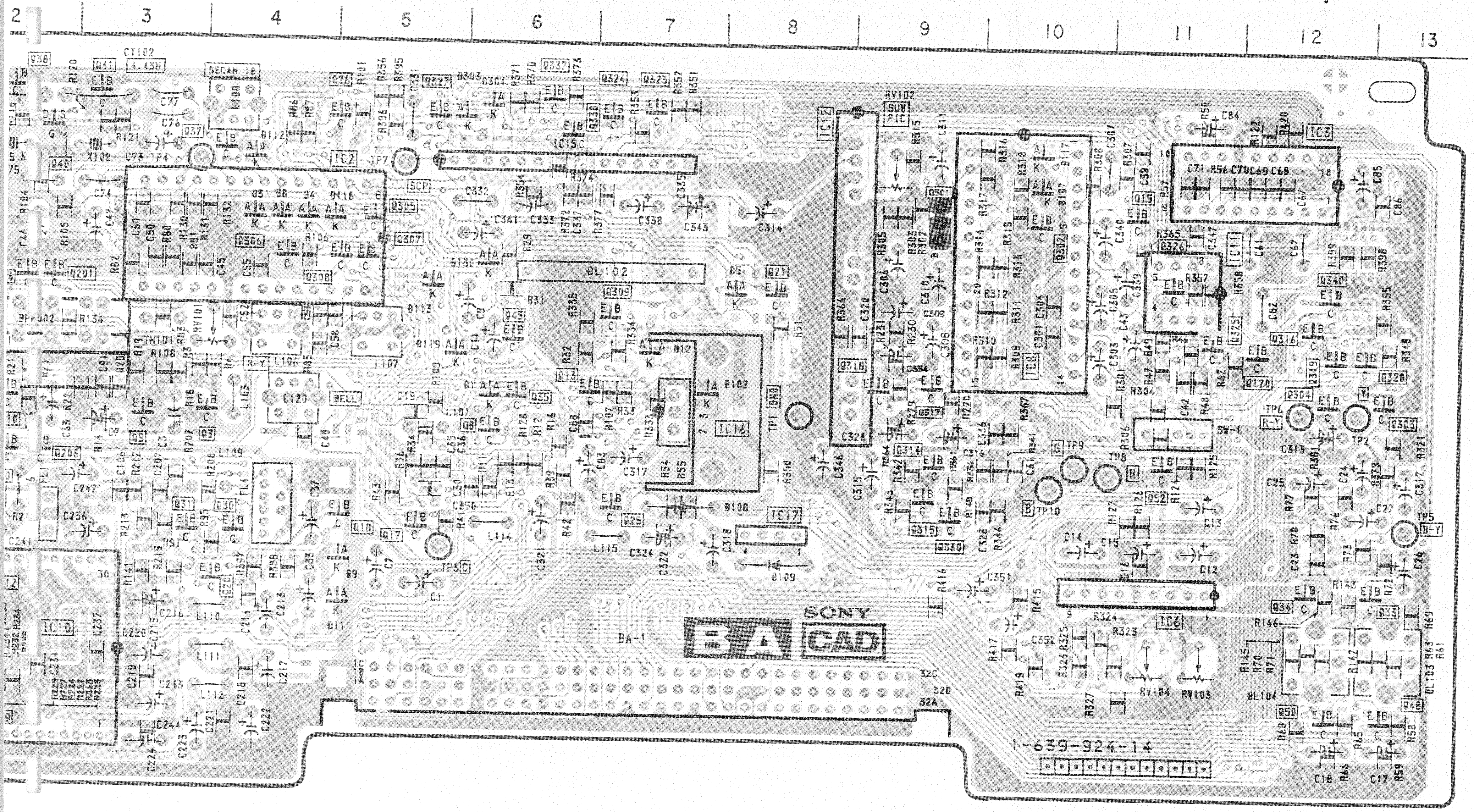

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
A-1135-692-A
1-639-924-14
CAD
SONY
B A
IC1
IC2
IC3
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC17
IC19
RV101
RV102
RV103
RV104
CT101 3.58M
CT102 4.43M
BPF001
BPF002
DL102
SECAM ID
BELL
SUB HUE
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
OFF
ON
SW-1
BA-1

(CONDUCTOR SIDE)

-CONDUCTOR SIDE-


10
11
12
13
SECAM 18
CT102 4.43M
CT101 3.38M
BL101
BPF002
BPF001
RV101
TH101
IC5
IC10
FL2
FL3
FL4
L104
L105
X101
X102


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
CT101 3.38M
CT102 4.43M
SECAM 18
IC2
IC12
IC15
IC16
IC17
IC10
BL101
BL102
BPF002
BPF001
RV101
RV102
RV105
TH101
TP1
TP3
TP4
TP7
TP9
TP10
SCP
BELL
SONY
B A CAD
BA-1
1-639-924-1
32C
32B
32A


2
3
4
5
6
7
8
9
10
11
12
13
SONY
B A
CAD
BA-1
1-639-924-14
32A
32B
32C
SECAM 18
CT102
4.43M
BELL
DL102
IC2
IC3
IC6
IC8
IC10
IC11
IC12
IC15
IC16
IC17
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
RV101
RV102
RV103
RV104
R-Y
B-Y
SCP
SUB PIC

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

BA BOARD
(CONDUCTOR SIDE)

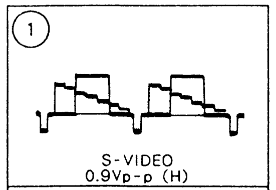
IC	
IC2	B-3
IC3	A-9
IC6	D-8
IC8	B-8
IC10	D-2
IC11	B-9
IC12	B-7
IC15	A-5
IC16	C-6
IC17	C-6

TRANSISTOR	
Q3	C-3
Q8	C-4
Q9	C-2
Q10	C-2
Q11	B-2
Q13	C-5
Q15	B-8
Q17	C-4
Q18	C-4
Q20	D-3
Q21	B-6
Q25	C-5
Q26	A-4
Q30	C-3
Q31	C-3
Q33	D-10
Q34	C-9
Q35	C-5
Q37	A-3
Q38	A-2
Q39	A-1
Q40	A-2
Q41	A-2
Q45	B-5
Q48	D-10
Q50	D-9
Q52	C-8
Q120	B-9
Q201	B-2
Q202	A-1
Q203	A-1
Q204	B-2
Q208	C-2
Q209	D-1
Q210	D-1
Q212	D-1
Q213	D-1
Q301	B-7
Q302	B-8
Q303	C-10
Q304	B-9
Q305	B-4
Q306	B-3
Q307	B-4
Q308	B-4
Q309	B-5
Q314	C-7
Q315	C-7
Q316	B-9
Q317	C-7
Q318	C-7
Q319	B-9
Q320	B-10
Q323	A-5
Q324	A-5
Q325	B-9
Q326	B-8
Q327	A-4
Q330	C-7
Q337	A-5
Q338	A-5
Q340	B-9
Q350	C-2

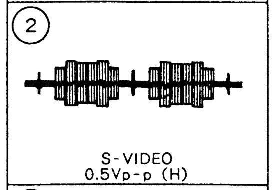
DIODE	
D1	C-4
D3	B-3
D4	B-3
D5	B-6
D8	B-3
D9	D-4
D11	D-4
D12	B-6
D102	C-6
D107	A-8
D108	C-6
D109	D-6
D112	A-3
D113	B-4
D117	A-8
D118	B-4
D119	B-4
D130	B-4
D303	A-4
D304	A-4

VARIABLE RESISTOR	
CT101	A-1
CT102	A-2
RV101	B-3
RV102	A-7
RV103	D-9
RV104	D-8
RV105	A-2

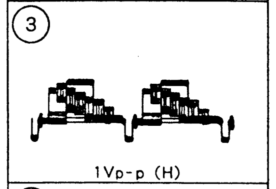
BB BOARD (1/2)
WAVEFORMS


①

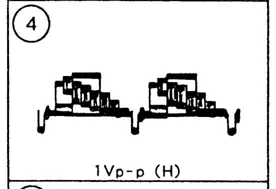
S-VIDEO
0.9Vp-p (H)


②

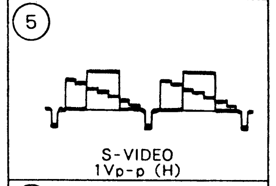
S-VIDEO
0.5Vp-p (H)


③

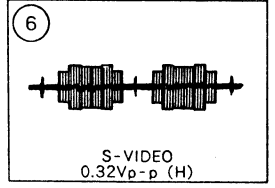
1Vp-p (H)


④

1Vp-p (H)


⑤

S-VIDEO
1Vp-p (H)


⑥

S-VIDEO
0.32Vp-p (H)

BB (1/2)	IC401	LA7016	SYNC. SW-1	531	DTC144EK	MODE SW-12
	402	LM7812CT	+12V REG	532	2SC2712	AUDIO AMP-4
	403	LM7912CT	–12V REG	533	2SC2712	AUDIO BUFF-3
	404	MC14053BF	SIG. SW	534	2SD789-4	MODE SW-13
	405	SN74HC157ANS	MODE SW-1	535	DTC144EK	MODE SW-14
	407	SN74HC157ANS	SYNC SW-2	536	DTC144EK	MODE SW-15
	408	HD14053BFP	MODE SW-2	537	DTC144EK	MODE SW-16
	409	HD14053BFP	MODE SW-3	538	DTC144EK	MODE SW-17
	412	µPC1406HA	AUDIO ATT.	540	DTC144EK	MODE SW-18
	422	µPC393G2	MODE ENCODER-1	545	2SA1162	MODE SW-23
	423	SN74HC32ANS	MODE ENCODER-2	546	DTC144EK	MODE SW-24
	424	µPC393G2	MODE ENCODER-3	548	DTC144EK	MODE SW-26
				549	DTC144EK	MODE SW-27
	Q401	2SD774	+5REG.	550	DTC144EK	MODE SW-28
	402	2SB734	–5REG.	551	DTC144EK	MODE SW-29
	403	DTC144EK	POWER CONT-1	552	DTC144EK	MODE SW-30
	404	2SC2712	POWER CONT-2	553	2SC2712	AUDIO BUFF-2
	405	DTC144EK	POWER CONT-3	710	2SC3545	G BUFF-5
	450	2SC2712	SIRCS SW-1	741	DTC144EK	MODE SW-31
	451	2SC2712	SIRCS SW-2	757	2SC3545	B BUFF-7
	452	2SC2712	SIRCS SW-3			
	453	DTC144EK	SIRCS SW-4	D401	V06C	+12V PROT
	454	DTC144EK	SIRCS SW-5	402	V06C	–12V PROT
	456	2SC2712	SIRCS SW-6	450	1S2837	SIRCS OR
	457	2SA1162	SIRCS SW-7	451	1S2837	AUDIO PROT-1
	501	2SC2712	H.SYNC SW-1	452	RD2.4MB	LEBEL SHIFT
	502	2SC2712	H.SYNC SW-2	501	1S2837	H.SYNC CLAMP
	503	2SC2712	V.SYNC SW-1	502	1S2837	V.SYNC CLAMP
	504	2SC2712	V.SYNC SW-2	503	1S2837	VOLTAGE PROT.
	506	2SA1462	R BUFF.	504	RD5.1M-B2	AUDIO PROT-2
	507	2SA1462	G BUFF.	506	RD5.1M-B2	POW CONT.
	508	2SA1462	B BUFF.	507	RD5.1M-B2	H.SYNC PROT
	509	2SA1462	VIDEO BUFF.	508	RD5.1M-B2	V.SYNC PROT
	510	DTC144EK	MODE SW-1	509	RD5.1M-B2	R PROT-1
	511	DTC144EK	MODE SW-2	510	RD5.1M-B2	R PROT-2
	512	DTC144EK	MODE SW-3	511	RD5.1M-B2	G PROT-1
	513	DTC144EK	MODE SW-4	512	RD5.1M-B2	G PROT-2
	514	DTC144EK	MODE SW-5	513	RD5.1M-B2	B PROT-1
	515	2SC2712	MODE SW-6	514	RD5.1M-B2	B PROT-2
	516	2SA1462	Y BUFF-1	515	RD5.1M-B2	AUDIO PROT-4
	517	2SA1462	C BUFF-1	516	RD13M-B2	Y PROT.
	518	2SC2712	AUDIO BUFF-1	518	RD13M-B2	C PROT.
	519	2SC2712	AUDIO BUFF-2	520	RD5.1M-B2	S SW PROT-1
	520	DTC144EK	MODE SW-7	521	RD5.1M-B2	S SW PROT-2
	521	DTC144EK	MODE SW-8	522	RD13M-B2	VIDEO PROT-1
	522	2SC2712	VIDEO AMP-1	523	RD13M-B2	VIDEO PROT-2
	523	2SC2712	VIDEO AMP-2	524	RD5.1M-B2	HD SEL PROT.
	524	2SC2712	VIDEO BUFF-2	525	RD2.4MB	LEBEL SHIFT
	525	2SC2712	AUDIO AMP-1	526	1S2837	MODE SW-1
	526	2SC2712	AUDIO AMP-2	527	RD5.1M-B2	SUB5V PROT
	527	2SC2712	AUDIO AMP-3	528	1S2837	MODE SW-2
	528	DTC144EK	MODE SW-9	529	RD3.3MB2	LEBEL SHIFT
	529	DTC144EK	MODE SW-10	530	1S2837	AUDIO MUTE
	530	DTC144EK	MODE SW-11			

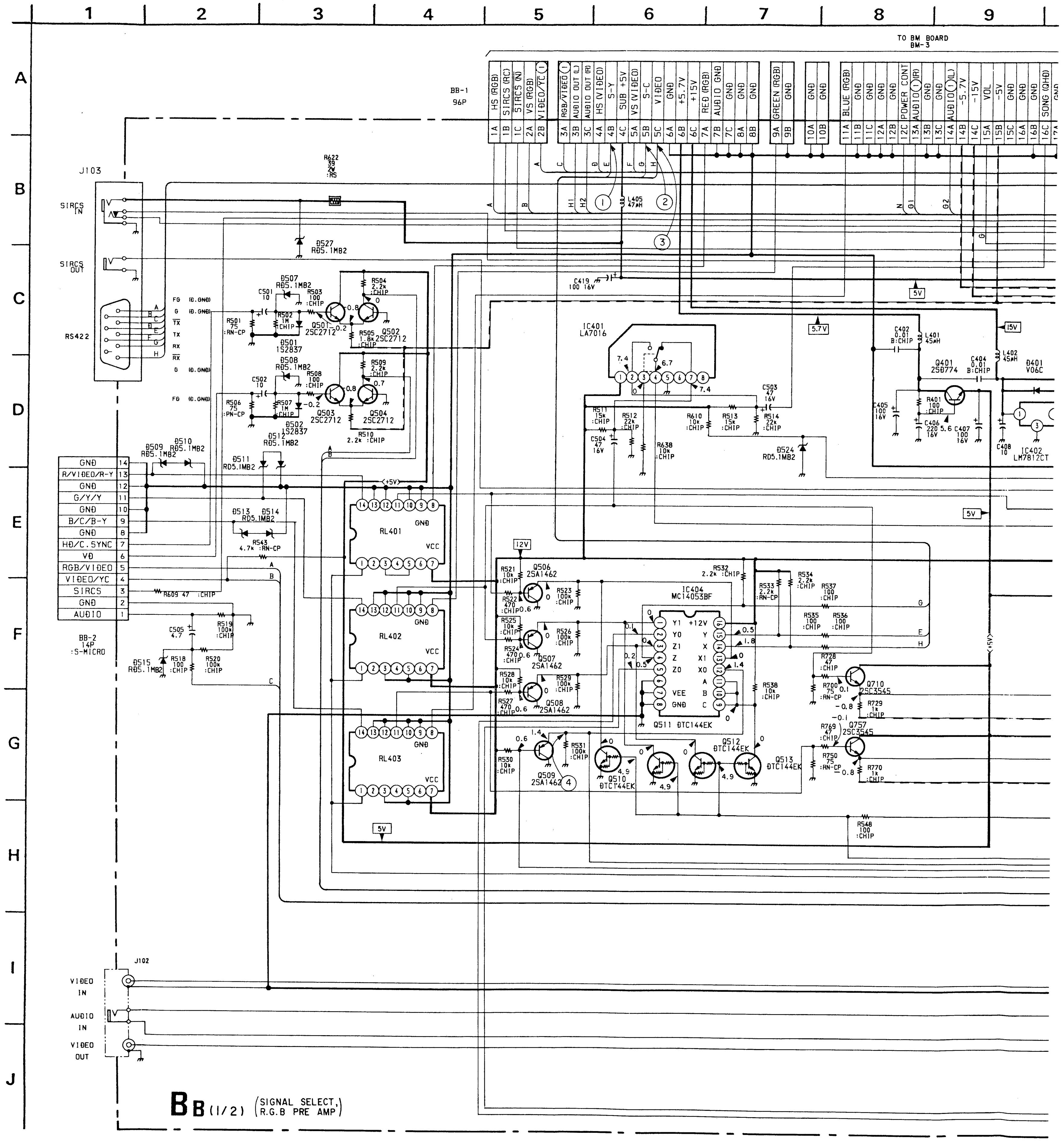
BB BOARD (1/2)

REF.	Pin No.	NTSC 3.58	S-VIDEO
IC404	②	0.1	1.6
	④	0.5	1.4
	⑤	0.1	1.4
	⑫	1.4	0.1
	⑭	1.8	0.5
	⑮	0.5	2
IC405	⑥	4.5	0
	⑦	4.8	0
IC408	③	4.5	0
	④	4.5	0
	⑩	4.6	4.8
	⑪	4.5	4.6
IC423	②	4.9	0

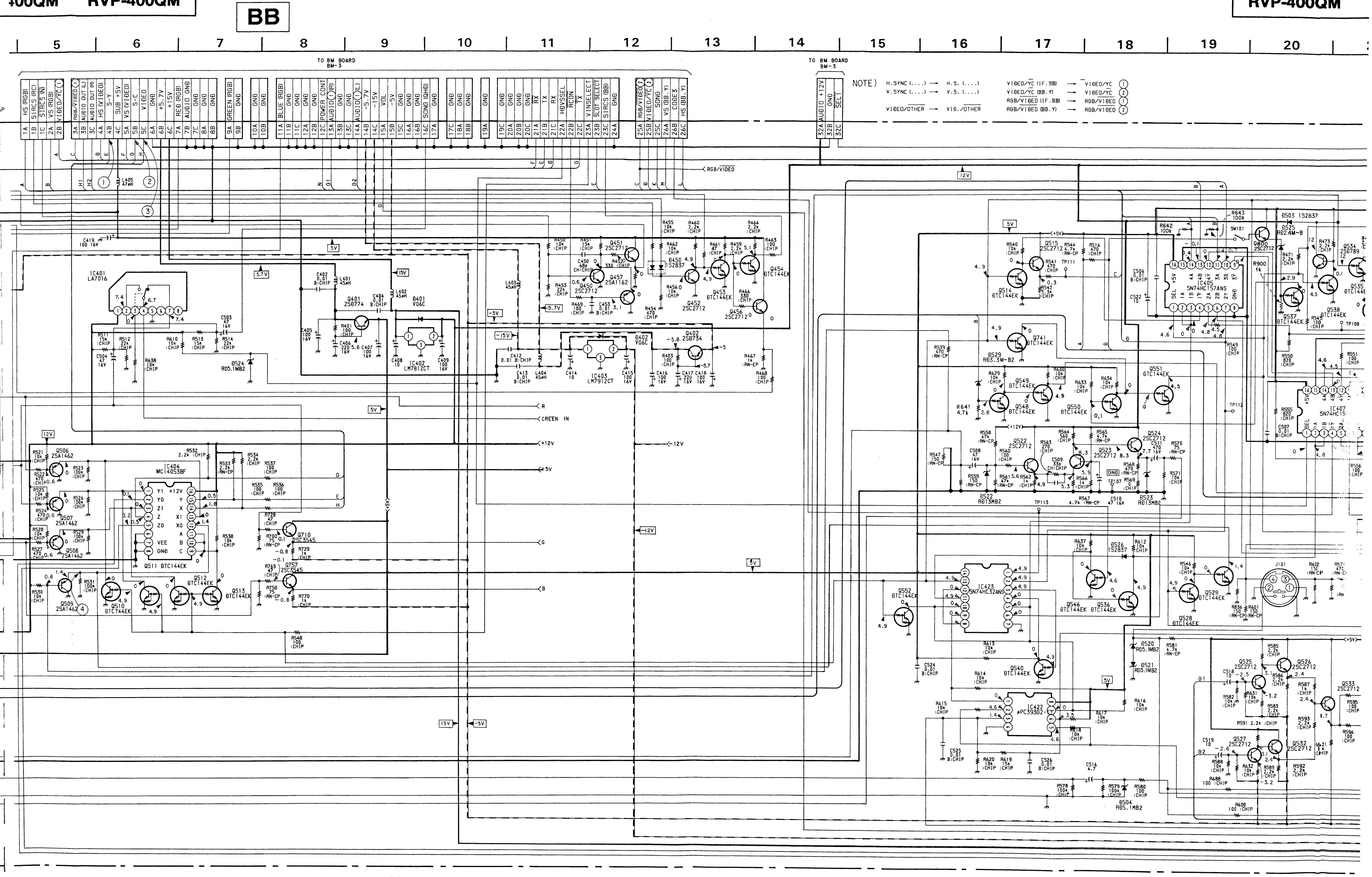
REF.		NTSC 3.58	S-VIDEO
Q509	B	0.6	0.6
	C	–	–
	E	1.4	0
Q516	B	0.6	0.6
	C	0.1	1.6
	E	–	–
Q517	B	0.6	0.6
	C	0.1	1.4
	E	–	–
Q528	B	4.9	0
	C	0	4.1
	E	–	–
Q529	B	0	1.4
	C	4.1	0
	E	–	–
Q530	B	4.9	0
	C	0.1	1.6
	E	–	–
Q531	B	4.9	0
	C	0.1	1.4
	E	–	–

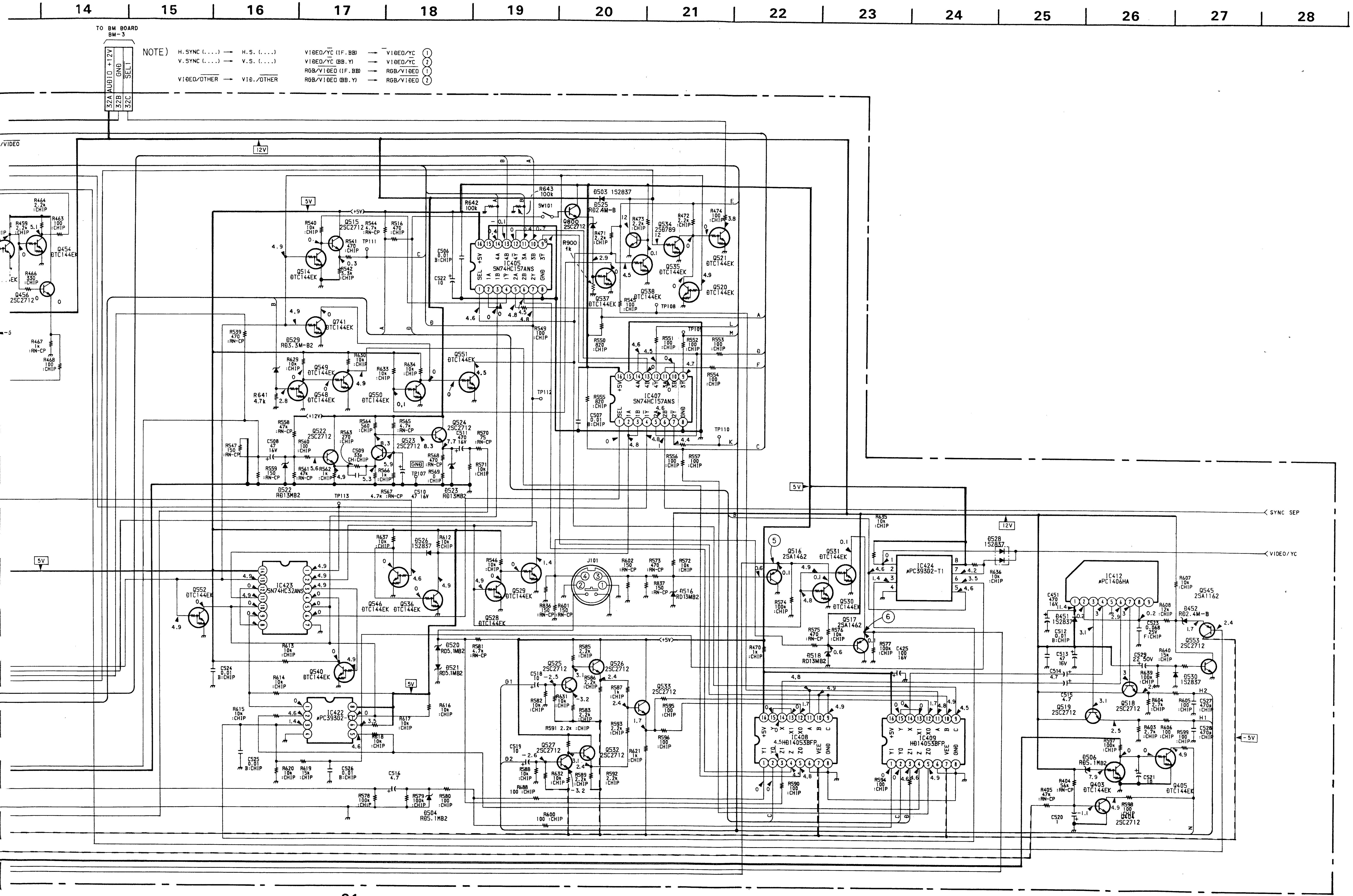
BB

BB BOARD (1/2) (Page 182 – 186)

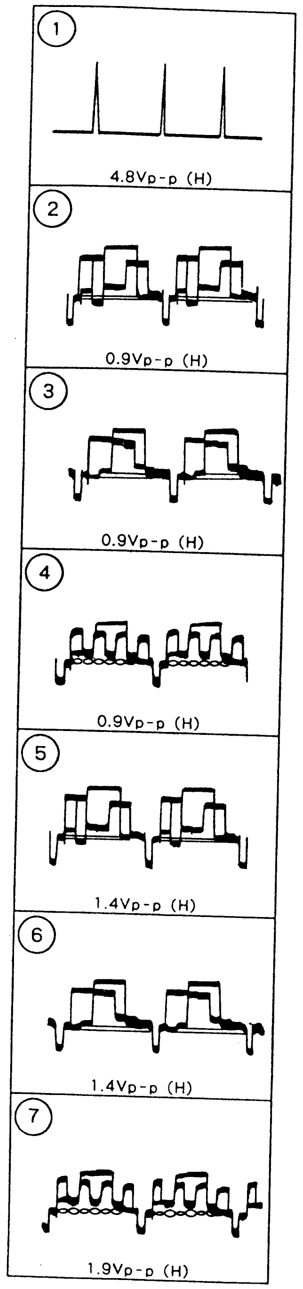

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
TO BM BOARD BM-3
BB-1 96P
J103
SIRCS IN
SIRCS OUT
RS422
IC401 LA7016
IC402 LM7812CT
Q401 2SD774
D401 V06C
RL401
RL402
RL403
IC404 MC14053BF
Q510 DTC144EK
Q511 DTC144EK
Q512 DTC144EK
Q513 DTC144EK
Q710 2SC3545
Q757 2SC3545
GND
R/VIDEO/R-Y
G/Y/Y
B/C/B-Y
HD/C.SYNC
VD
RGB/VIDEO
VIDEO/YC
SIRCS
AUDIO
BB-2 14P :S-MICRO
J102
VIDEO IN
AUDIO IN
VIDEO OUT

B B (1/2) (SIGNAL SELECT, R.G.B PRE AMP)


BB
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
TO BM BOARD
BM-3
1A HS (RGB)
1B SIRCS (RC)
1C SIRCS (N)
2A VS (RGB)
2B VIDEO/YC ①
3A RGB/VIDEO ①
3B AUDIO OUT (L)
3C AUDIO OUT (R)
4A HS (VIDEO)
4B S-Y
4C SUB +5V
5A VS (VIDEO)
5B S-C
5C VIDEO
6A GND
6B +5.7V
6C +15V
7A RED (RGB)
7B AUDIO GND
7C GND
8A GND
8B GND
9A GREEN (RGB)
9B GND
10A GND
10B GND
11A BLUE (RGB)
11B GND
11C GND
12A GND
12B GND
12C POWER CONT
13A AUDIO ① (R)
13B GND
13C GND
14A AUDIO ① (L)
14B -5.7V
14C -15V
15A VOL
15B -5V
15C GND
16A GND
16B GND
16C SONG (QHD)
17A GND
17C GND
18A GND
18B GND
19A GND
19C GND
20A GND
20B GND
20C GND
21A RX
21B TX
21C RX
22A HDVSSEL
22B RCON
22C TX
23A VINSELECT
23B SLOT SELECT
23C SIRCS (BB)
24A GND
25A RGB/VIDEO ②
25B VIDEO/YC ②
25C SONG
26A VS (BB.Y)
26B CODE3
26C HS (BB.Y)
32A AUDIO +12V
32B GND
32C SEL1
NOTE)
H.SYNC (....) → H.S. (....)
V.SYNC (....) → V.S. (....)
VIDEO/OTHER → VID./OTHER
VIDEO/YC (IF.BB) → VIDEO/YC ①
VIDEO/YC (BB.Y) → VIDEO/YC ②
RGB/VIDEO (IF.BB) → RGB/VIDEO ①
RGB/VIDEO (BB.Y) → RGB/VIDEO ②
RGB/VIDEO
L405 47μH
C419 100 16V
IC401 LA7016
C503 47 16V
R511 15k :CHIP
R512 22k :CHIP
C504 47 16V
R638 10k :CHIP
R610 10k :CHIP
R513 15k :CHIP
R514 22k :CHIP
D524 RD5.1MB2
C402 0.01 B:CHIP
L401 45μH
Q401 2SB774
C404 0.01 B:CHIP
L402 45μH
D401 VO6C
C405 100 16V
R401 100 :CHIP
C406 220 16V
C407 100 16V
IC402 LM7812CT
C408 10
C409 100 16V
L403 45μH
C412 0.01 B:CHIP
C413 0.01 B:CHIP
L404 45μH
C414 10
IC403 LM7912CT
C415 100 16V
D402 VO6C
Q402 2SB734
R403 100 :CHIP
C416 100 16V
C417 220 16V
C418 100 16V
R450 10k :CHIP
R451 15k :CHIP
Q451 2SC2712
C450 68p CH:CHIP
R452 330 :CHIP
Q457 2SA1162
Q450 2SC2712
R453 22k :CHIP
R469 100 :CHIP
C453 0.01 B:CHIP
R454 470 :CHIP
R455 10k :CHIP
R460 2.2k :CHIP
R462 10k :CHIP
D450 1S2837
R456 10k :CHIP
Q452 2SC2712
R461 47 :CHIP
R459 2.2k :CHIP
Q453 DTC144EK
R464 2.2k :CHIP
R463 100 :CHIP
Q454 DTC144EK
R466 330 :CHIP
Q456 2SC2712
R467 1k :RN-CP
R468 100 :CHIP
5V
5.7V
15V
-5V
-15V
-5.7V
12V
R
GREEN IN
+12V
+5V
G
B
E
H
IC404 MC14053BF
Q506 2SA1462
R521 10k :CHIP
R522 470 :CHIP
R523 100k :CHIP
R525 10k :CHIP
R526 100k :CHIP
R524 470 :CHIP
Q507 2SA1462
R528 10k :CHIP
R529 100k :CHIP
R527 470 :CHIP
Q508 2SA1462
Q511 DTC144EK
R532 2.2k :CHIP
R533 2.2k :RN-CP
R534 2.2k :CHIP
R537 100 :CHIP
R535 100 :CHIP
R536 100 :CHIP
R538 10k :CHIP
R530 10k :CHIP
R531 100k :CHIP
Q509 2SA1462
Q510 DTC144EK
Q512 DTC144EK
Q513 DTC144EK
R728 47 :CHIP
Q710 2SC3545
R700 75 :RN-CP
R729 1k :CHIP
R769 47 :CHIP
Q757 2SC3545
R750 75 :RN-CP
R770 1k :CHIP
R548 100 :CHIP
R540 10k :CHIP
Q515 2SC2712
R544 4.7k :RN-CP
R541 470 :CHIP
TP111
R542 3.3k :CHIP
Q514 DTC144EK
R516 470 :CHIP
C506 0.01 B:CHIP
C522 10
IC405 SN74HC157ANS
R643 100k
R642 100k
SW101
Q800 2SC2712
D503 1S2837
D525 RD2.4M-B
R471 2.2k :CHIP
R473 2.2k :CHIP
Q534 2SB789
R900 1k
Q537 DTC144EK
R545 100 :CHIP
Q538 DTC144EK
Q535 DTC144EK
TP108
Q741 DTC144EK
D529 RD3.3M-B2
R539 470 :RN-CP
R549 100 :CHIP
R629 10k :CHIP
Q549 DTC144EK
R630 10k :CHIP
R633 10k :CHIP
R634 10k :CHIP
Q551 DTC144EK
R641 4.7k
Q548 DTC144EK
Q550 DTC144EK
TP112
R550 820 :CHIP
R551 100 :CHIP
R555 820 :CHIP
C507 0.01 B:CHIP
IC407 SN74HC15
R558 47k :RN-CP
Q522 2SC2712
R564 560 :CHIP
R565 4.7k :RN-CP
Q524 2SC2712
R560 100 :CHIP
R563 270 :CHIP
C509 33p CH:CHIP
Q523 2SC2712
C511 470 16V
R570 75 :RN-CP
R547 150 :RN-CP
C508 47 16V
R568 470 :RN-CP
GND
R569 0 :CHIP
R571 10k :CHIP
R559 150 :RN-CP
R561 47k :RN-CP
R562 1k :CHIP
R566 1k :CHIP
TP107
D522 RD13MB2
TP113
R567 4.7k :RN-CP
C510 47 16V
D523 RD13MB2
R556 100 :CHIP
R637 10k :CHIP
D526 1S2837
R612 10k :CHIP
IC423 SN74HC32ANS
Q552 DTC144EK
Q546 DTC144EK
Q536 DTC144EK
R546 10k :CHIP
Q529 DTC144EK
J101
R612 15k :RN-CP
R836 150 :RN-CP
R601 150 :RN-CP
Q528 DTC144EK
R613 10k :CHIP
Q540 DTC144EK
D520 RD5.1MB2
R581 4.7k :RN-CP
D521 RD5.1MB2
C524 0.01 B:CHIP
R614 10k :CHIP
R615 10k :CHIP
IC422 μPC393G2
R616 10k :CHIP
R617 10k :CHIP
R618 10k :CHIP
C525 0.01 B:CHIP
R620 10k :CHIP
R619 15k :CHIP
C526 0.01 B:CHIP
C516 4.7
R578 100k :CHIP
R579 100k :CHIP
R580 100 :CHIP
D504 RD5.1MB2
+5V
Q525 2SC2712
R585 2.2k :CHIP
Q526 2SC2712
G1
C518 10
R586 2.2k :CHIP
R587 1k :CHIP
Q533 2SC2712
R582 10k :CHIP
R631 10k :CHIP
R583 2.2k :CHIP
R595 100 :CHIP
R591 2.2k :CHIP
R593 2.2k :CHIP
R596 100 :CHIP
C519 10
Q527 2SC2712
Q532 2SC2712
R621 1k :CHIP
G2
R588 10k :CHIP
R632 10k :CHIP
R589 2.2k :CHIP
R592 2.2k :CHIP
R688 100 :CHIP
R600 100 :CHIP


14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
TO BM BOARD BM-3
32A AUDIO +12V
32B GND
32C SELT
NOTE) H.SYNC (....) → H.S. (....)
V.SYNC (....) → V.S. (....)
VIDEO/OTHER → VID./OTHER
VIDEO/YC (IF.BB) → VIDEO/YC ①
VIDEO/YC (BB.Y) → VIDEO/YC ②
RGB/VIDEO (IF.BB) → RGB/VIDEO ①
RGB/VIDEO (BB.Y) → RGB/VIDEO ②
12V
5V
IC405 SN74HC157ANS
IC407 SN74HC157ANS
IC423 SN74HC32ANS
IC422 μPC3936Z
IC424 μPC3936Z-T1
IC408 HD14053BFP
IC409 HD14053BFP
IC412 μPC1406HA
J101
SW101
Q515 2SC2712
Q514 DTC144EK
Q741 DTC144EK
Q549 DTC144EK
Q548 DTC144EK
Q550 DTC144EK
Q551 DTC144EK
Q522 2SC2712
Q523 2SC2712
Q524 2SC2712
Q800 2SC2712
Q534 2SB789
Q535 DTC144EK
Q521 DTC144EK
Q520 DTC144EK
Q537 DTC144EK
Q538 DTC144EK
Q552 DTC144EK
Q546 DTC144EK
Q536 DTC144EK
Q529 DTC144EK
Q528 DTC144EK
Q540 DTC144EK
Q525 2SC2712
Q526 2SC2712
Q533 2SC2712
Q527 2SC2712
Q532 2SC2712
Q516 2SA1462
Q531 DTC144EK
Q530 DTC144EK
Q517 2SA1462
Q545 2SA1162
Q553 2SC2712
Q518 2SC2712
Q519 2SC2712
Q403 DTC144EK
Q405 DTC144EK
Q404 2SC2712
Q454 DTC144EK
Q456 2SC2712
D503 1S2837
D525 RD2.4M-B
D529 RD3.3M-B2
D522 RD13MB2
D523 RD13MB2
D526 1S2837
D516 RD13MB2
D520 RD5.1MB2
D521 RD5.1MB2
D504 RD5.1MB2
D518 RD13MB2
D528 1S2837
D451 1S2837
D452 RD2.4M-B
D530 1S2837
D506 RD5.1MB2
TP107
TP108
TP109
TP110
TP111
TP112
TP113
GND
SYNC SEP
VIDEO/YC
-5V
G1
G2
H1
H2
/VIDEO
⑤
⑥

BB BOARD (2/2) WAVEFORMS

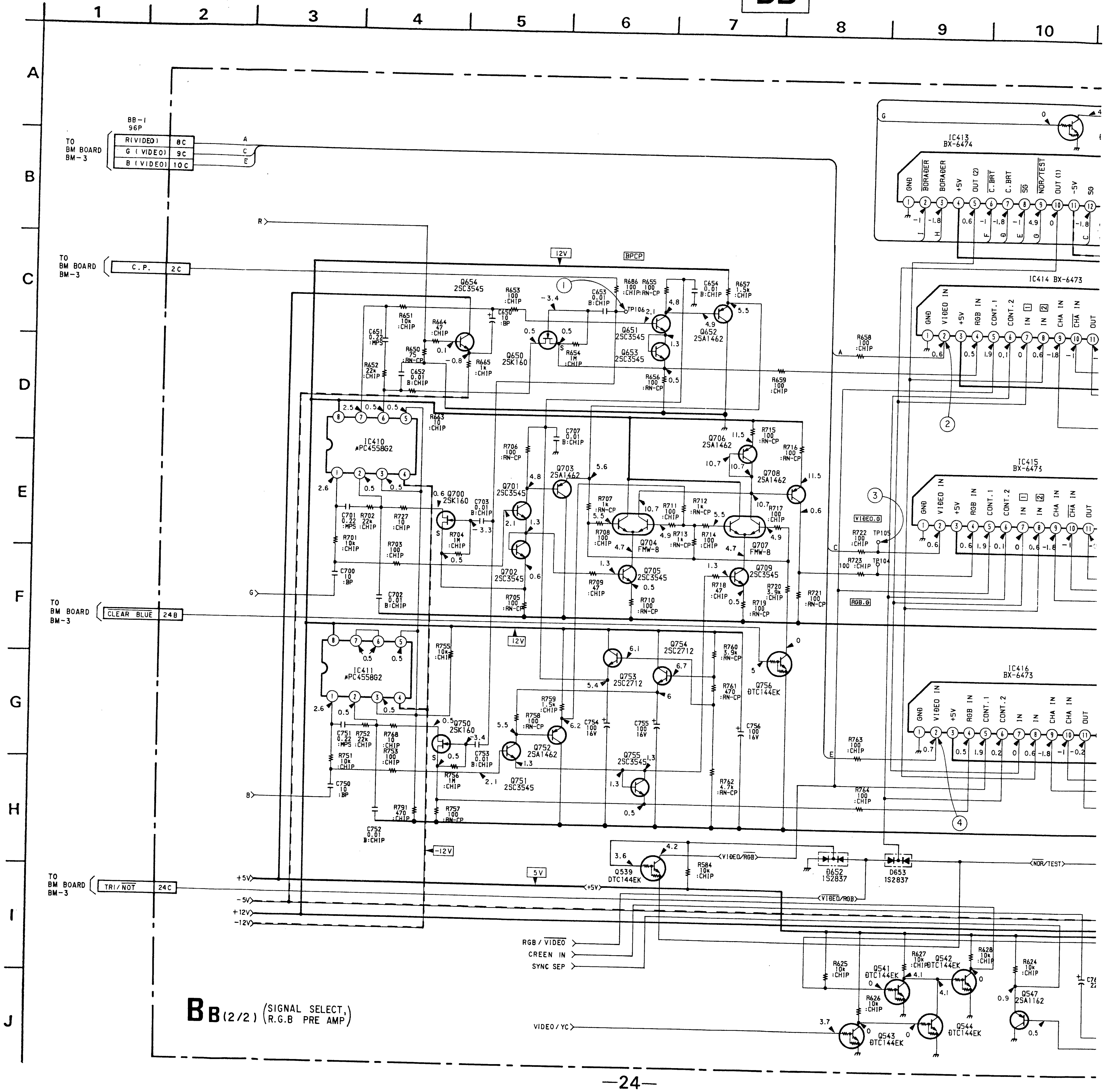


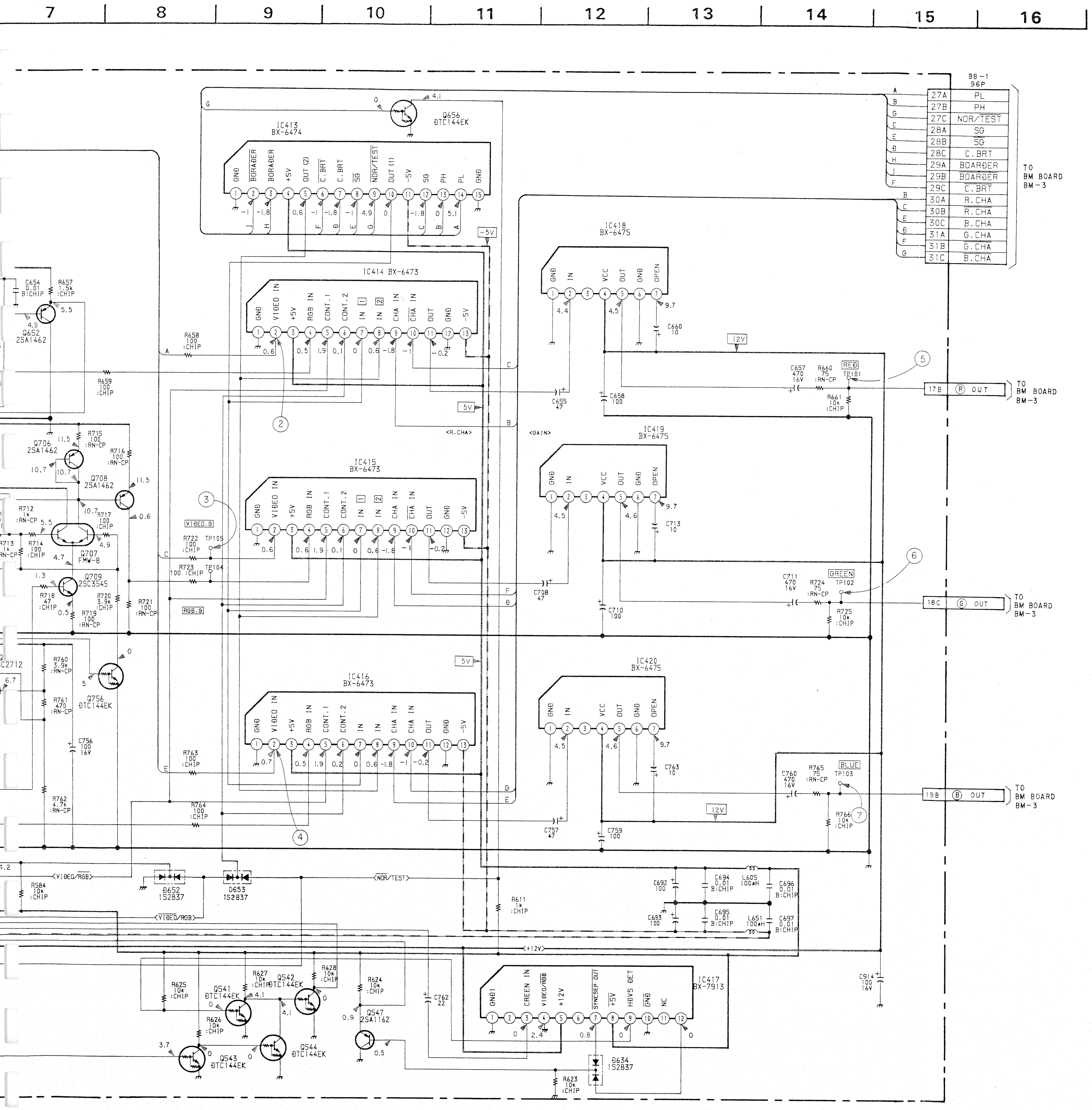
BB (2/2)	IC410	μPC4558G2	SIG. CLAMP-1
	411	μPC4558G2	SIG. CLAMP-2
	413	BX-6474	TEST SIG. GEN.
	414	BX-6473	R SIG. SW
	415	BX-6473	G SIG. SW
	416	BX-6473	B SIG. SW
	417	BX-7913	S ON G SYNC SEP.
	418	BX-6475	R AMP.
	419	BX-6475	G AMP.
	420	BX-6475	B AMP.
	Q539	DTC144EK	MODE SW-17
	541	DTC144EK	MODE SW-19
	542	DTC144EK	MODE SW-20
	543	DTC144EK	MODE SW-21
	544	DTC144EK	MODE SW-22
	547	2SA1162	MODE SW-25
	650	2SK160	R CLAMP
	651	2SC3545	R BUFF-1
	652	2SA1462	R BUFF-2
	653	2SC3545	R BUFF-3
	654	2SC3545	R BUFF-4
	656	DTC144EK	MODE SW-31
	700	2SK160	G CLAMP
	701	2SC3545	G BUFF-1
	702	2SC3545	G BUFF-2
	703	2SA1462	G BUFF-3
	704	FMW-8	CB SW-1
	705	2SC3545	CB SW-2
	706	2SA1462	CB SW-3
	707	FMW-8	CB SW-4
	708	2SA1462	G BUFF-4
	709	2SC3545	CB SW-5
	750	2SK160	B CLAMP
	751	2SC3545	B BUFF-1
	752	2SA1462	B BUFF-2
	753	2SC2712	B BUFF-3
	754	2SC2712	B BUFF-4
	755	2SC3545	B BUFF-5
	756	DTC144EK	B BUFF-6
	D634	1S2837	MODE OR-1
	652	1S2837	MODE OR-2
	653	1S2837	MODE OR-3

BB BOARD (2/2)

REF.	Pin No.	NTSC 3.58	S-VIDEO
IC414	②	0.6	3.1
	⑪	− 0.2	2.2
IC415	②	0.6	3.1
	⑪	− 0.2	2.2
IC416	②	0.7	3.1
	⑪	− 0.2	2.3

REF.		NTSC 3.58	S-VIDEO
Q539	B	3.6	2.4
	C	4.2	1.9
	E	–	–
Q656	B	0	4.9
	C	4.1	0
	E	–	–


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
BB-1 96P
TO BM BOARD BM-3
R(VIDEO) 8C
G (VIDEO) 9C
B (VIDEO) 10C
C.P. 2C
CLEAR BLUE 24B
TRI/NOT 24C
R
G
B
+5V
−5V
+12V
−12V
12V
5V
BPCP
IC410 μPC4558G2
IC411 μPC4558G2
IC413 BX-6474
IC414 BX-6473
IC415 BX-6473
IC416 BX-6473
GND
VIDEO IN
+5V
RGB IN
CONT.1
CONT.2
CHA IN
OUT
BORADER
OUT (2)
C.BRT
SG
NOR/TEST
OUT (1)
−5V
Q539 DTC144EK
Q541 DTC144EK
Q542 DTC144EK
Q543 DTC144EK
Q544 DTC144EK
Q547 2SA1162
Q650 2SK160
Q651 2SC3545
Q652 2SA1462
Q653 2SC3545
Q654 2SC3545
Q700 2SK160
Q701 2SC3545
Q702 2SC3545
Q703 2SA1462
Q704 FMW-8
Q705 2SC3545
Q706 2SA1462
Q707 FMW-8
Q708 2SA1462
Q709 2SC3545
Q750 2SK160
Q751 2SC3545
Q752 2SA1462
Q753 2SC2712
Q754 2SC2712
Q755 2SC3545
Q756 DTC144EK
D652 1S2837
D653 1S2837
VIDEO/RGB
NOR/TEST
RGB / VIDEO
CREEN IN
SYNC SEP
VIDEO / YC
VIDEO.0
RGB.0
TP105
TP104
TP106
BB (2/2) (SIGNAL SELECT, R.G.B PRE AMP)


7
8
9
10
11
12
13
14
15
16
IC413 BX-6474
IC414 BX-6473
IC415 BX-6473
IC416 BX-6473
IC417 BX-7913
IC418 BX-6475
IC419 BX-6475
IC420 BX-6475
Q656 DTC144EK
Q652 2SA1462
Q706 2SA1462
Q708 2SA1462
Q707 FMW-8
Q709 2SC3545
Q756 DTC144EK
Q541 DTC144EK
Q542 DTC144EK
Q543 DTC144EK
Q544 DTC144EK
Q547 2SA1162
D652 1S2837
D653 1S2837
D634 1S2837
BB-1 96P
TO BM BOARD BM-3
17B Ⓡ OUT
18C Ⓖ OUT
19B Ⓑ OUT
RED TP101
GREEN TP102
BLUE TP103
VIDEO.B TP105
RGB.B TP104
12V
5V
-5V
+12V
VIDEO/RGB
NOR/TEST

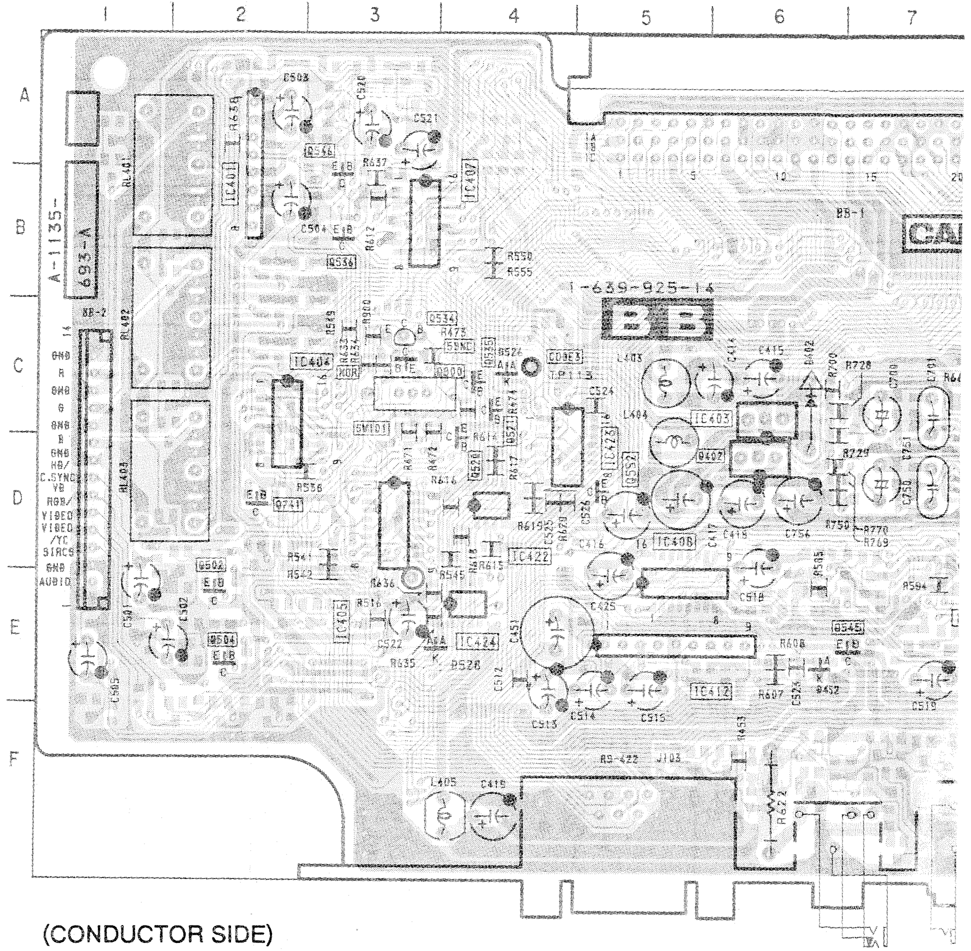
BB BOARD
(COMPONENT SIDE)

IC	
IC401	A-2
IC402	A-9
IC403	C-5
IC404	C-2
IC405	C-3
IC407	B-3
IC408	D-4
IC409	D-6
IC410	C-6
IC411	C-6
IC412	D-4
IC413	B-9
IC414	B-9
IC415	C-9
IC416	D-9
IC417	D-8
IC418	B-9
IC419	C-9
IC420	D-9
IC422	C-3
IC423	C-4
IC424	D-3

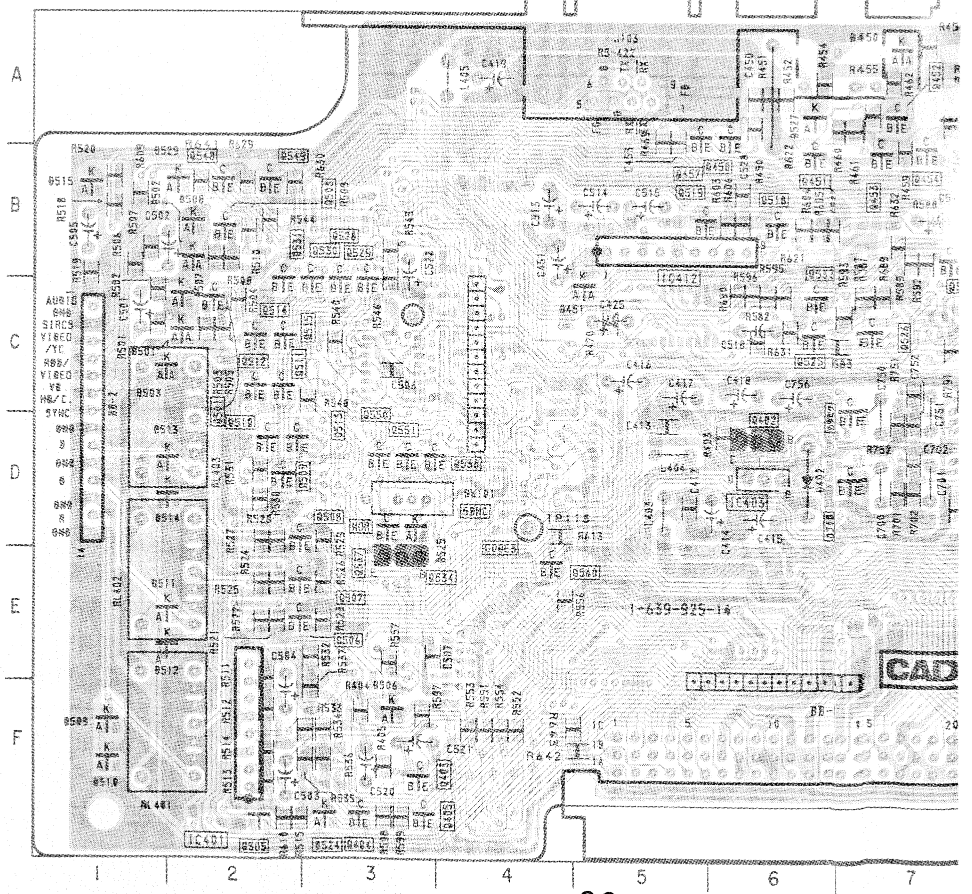
TRANSISTOR	
Q401	A-8
Q402	C-4
Q502	D-2
Q504	D-2
Q517	E-6
Q520	C-3
Q521	C-3
Q522	E-7
Q534	B-3
Q535	B-3
Q536	B-2
Q541	D-8
Q542	D-7
Q543	D-7
Q544	D-7
Q545	D-5
Q546	A-2
Q552	C-4
Q701	C-7
Q702	C-6
Q703	C-7
Q704	C-7
Q707	C-7
Q751	C-7

DIODE	
D401	A-10
D402	C-5
D452	D-5
D523	D-7
D526	B-3
D528	D-3
D530	D-7

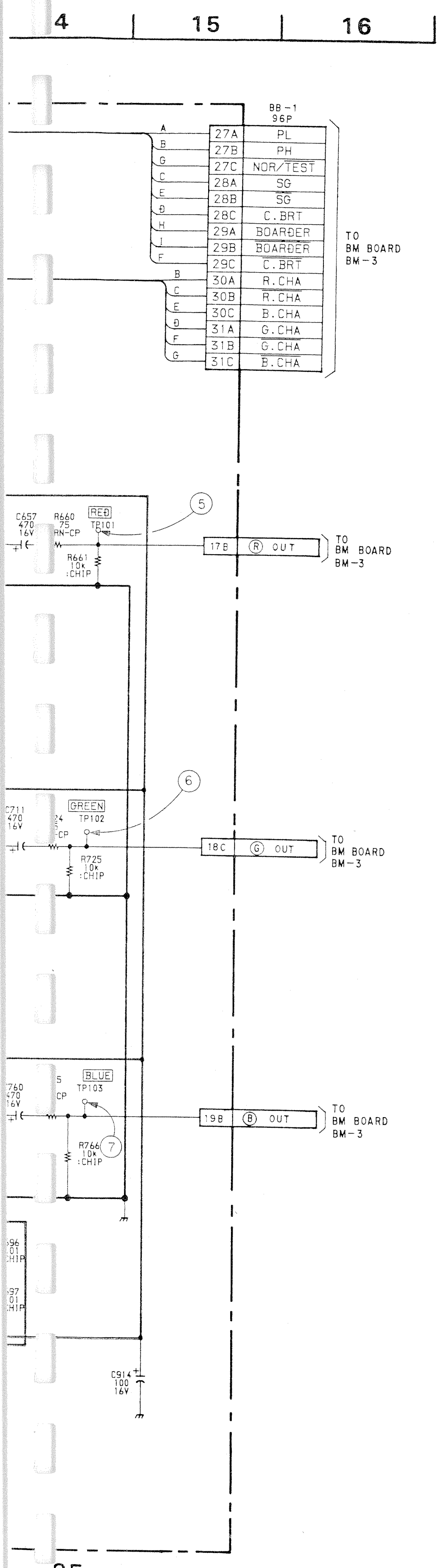
– BB BOARD – (COMPONENT SIDE) (Page 190,191)


1
2
3
4
5
6
7
A
B
C
D
E
F
1-639-925-14
BB
A-1135-693-A

(CONDUCTOR SIDE)


A
B
C
D
E
F
1
2
3
4
5
6
7
1-639-925-14

BB [SIGNAL SELECT R·G·B PRE AMP]


14
15
16
BB-1
96P
27A PL
27B PH
27C NOR/TEST
28A SG
28B SG
28C C.BRT
29A BOARDER
29B BOARDER
29C C.BRT
30A R.CHA
30B R.CHA
30C B.CHA
31A G.CHA
31B G.CHA
31C B.CHA
TO BM BOARD BM-3
RED TP101
17B Ⓡ OUT
TO BM BOARD BM-3
GREEN TP102
18C Ⓖ OUT
TO BM BOARD BM-3
BLUE TP103
19B Ⓑ OUT
TO BM BOARD BM-3
⑤
⑥
⑦
C914 100 16V

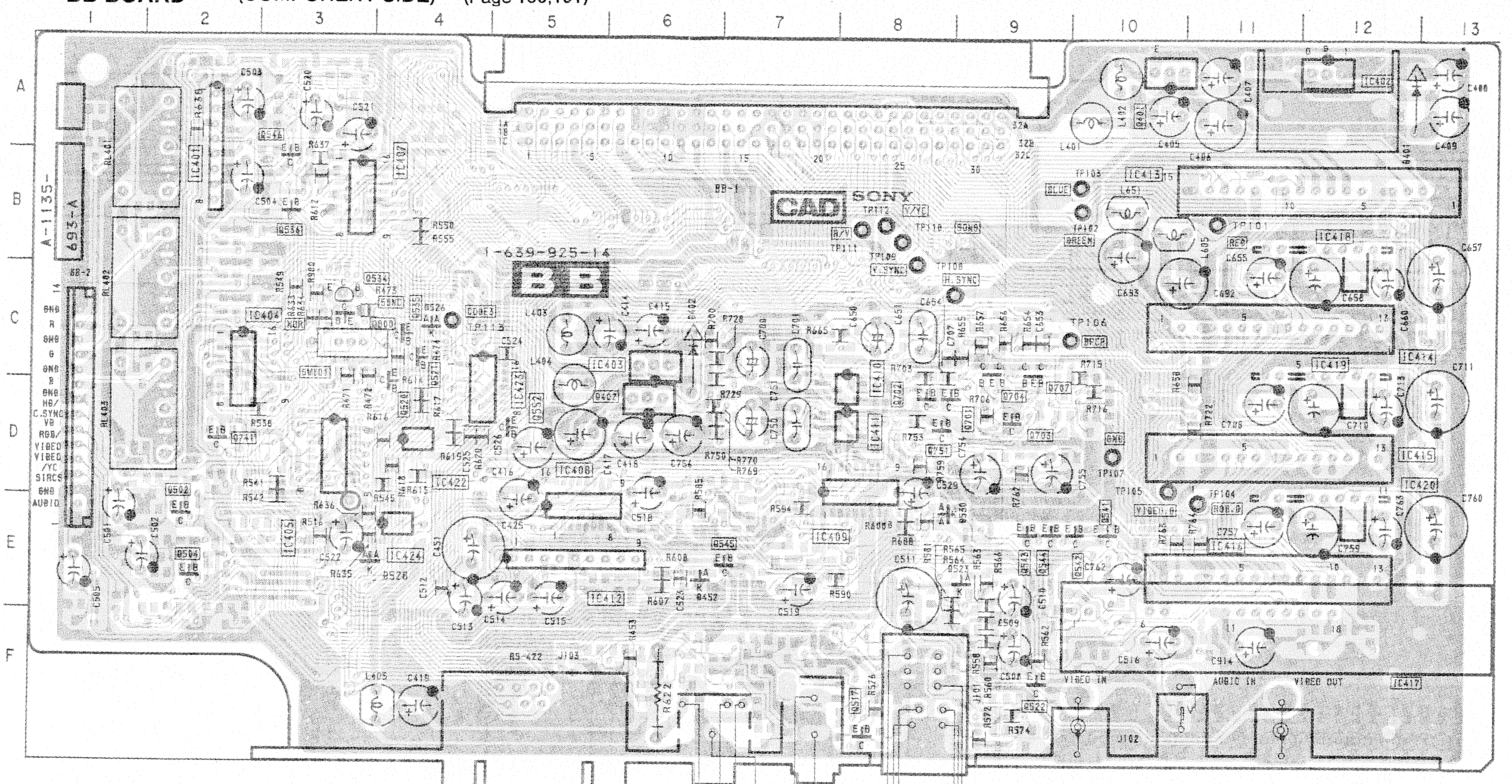
BB BOARD (COMPONENT SIDE)

IC	
IC401	A-2
IC402	A-9
IC403	C-5
IC404	C-2
IC405	C-3
IC407	B-3
IC408	D-4
IC409	D-6
IC410	C-6
IC411	C-6
IC412	D-4
IC413	B-9
IC414	B-9
IC415	C-9
IC416	D-9
IC417	D-8
IC418	B-9
IC419	C-9
IC420	D-9
IC422	C-3
IC423	C-4
IC424	D-3

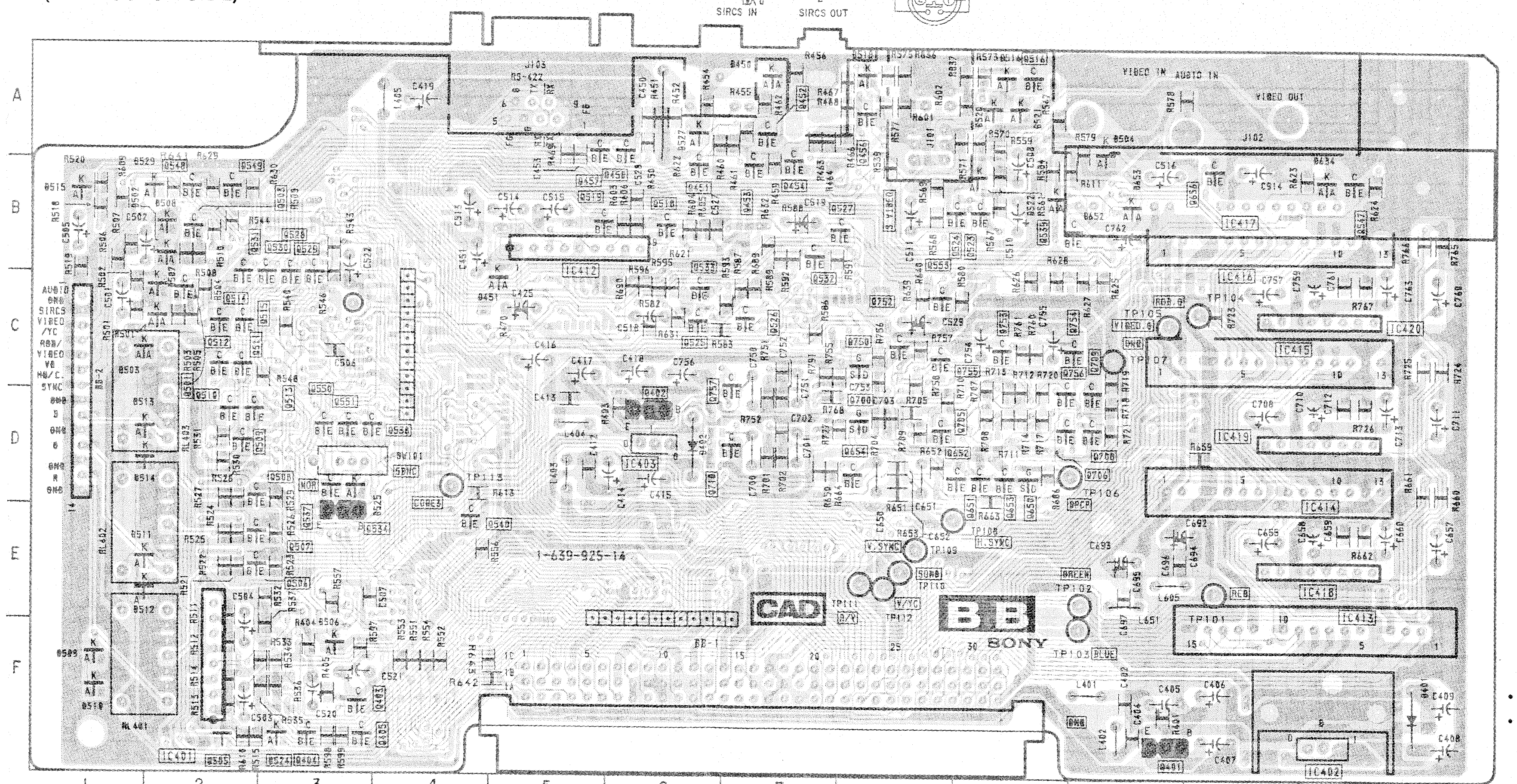
TRANSISTOR	
Q401	A-8
Q402	C-4
Q502	D-2
Q504	D-2
Q517	E-6
Q520	C-3
Q521	C-3
Q522	E-7
Q534	B-3
Q535	B-3
Q536	B-2
Q541	D-8
Q542	D-7
Q543	D-7
Q544	D-7
Q545	D-5
Q546	A-2
Q552	C-4
Q701	C-7
Q702	C-6
Q703	C-7
Q704	C-7
Q707	C-7
Q751	C-7

DIODE	
D401	A-10
D402	C-5
D452	D-5
D523	D-7
D526	B-3
D528	D-3
D530	D-7

– BB BOARD – (COMPONENT SIDE) (Page 190,191)


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
A-1135-693-A
1-639-925-14
BB
CAD
SONY
SIRCS IN
SIRCS OUT
AUDIO IN
VIDEO OUT
VIDEO IN
J102
J103

(CONDUCTOR SIDE)


A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
11
12
13
1-639-925-14
BB
CAD
SONY
VIDEO IN
AUDIO IN
VIDEO OUT
J102
J103

BB BOARD (CONDUCTOR SIDE)

IC	
IC401	E-2
IC402	E-9
IC403	C-5
IC412	B-4
IC413	D-9
IC414	C-9
IC415	C-9
IC416	B-9
IC417	B-8
IC418	D-9
IC419	C-9
IC420	B-9

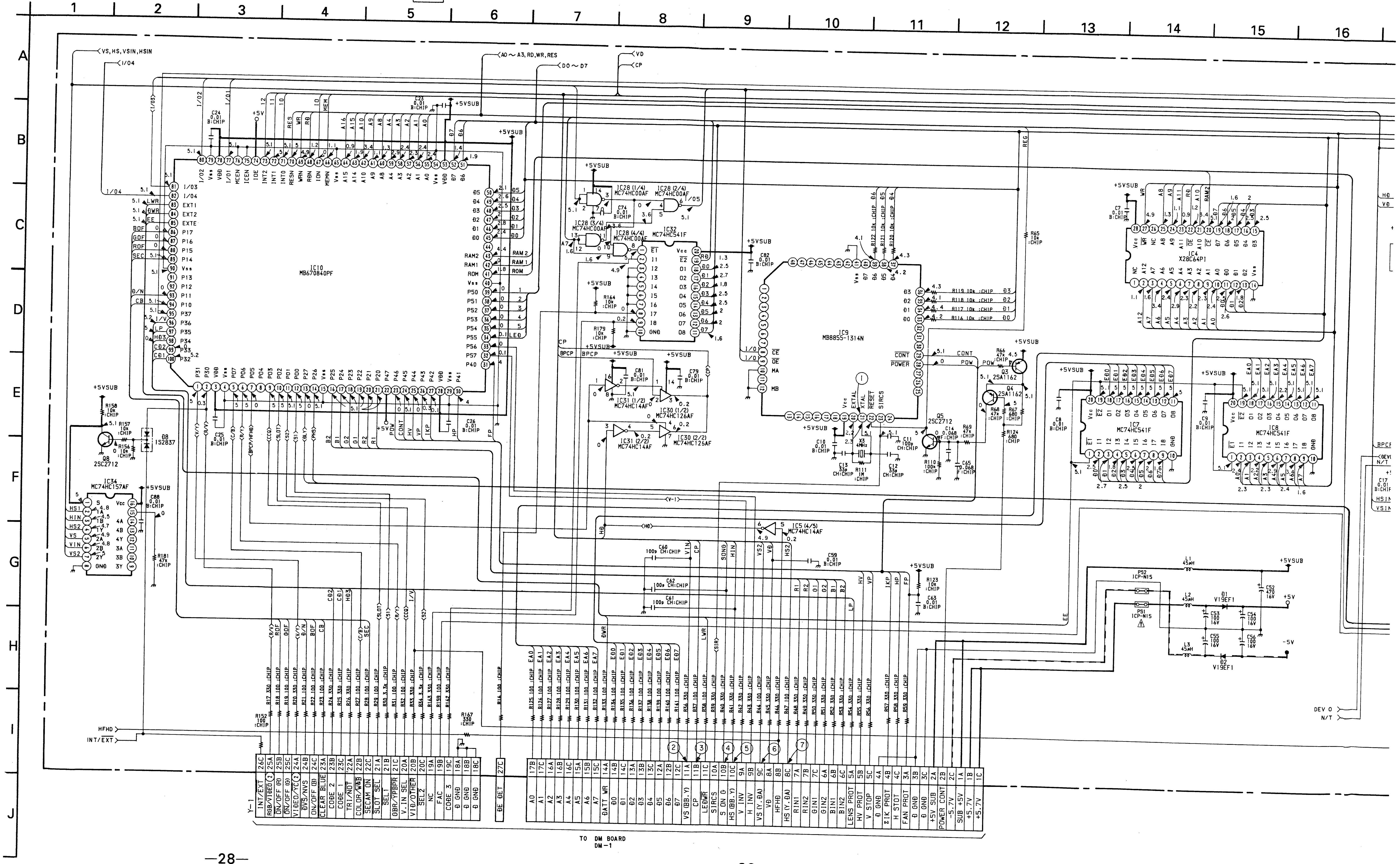
TRANSISTOR	
Q401	E-8
Q402	C-5
Q403	E-3
Q404	E-2
Q405	E-3
Q450	A-4
Q451	A-5
Q452	A-6
Q453	A-5
Q454	A-6
Q456	A-6
Q457	A-4
Q501	C-2
Q505	E-2
Q506	D-2
Q507	D-2
Q508	D-2
Q509	C-2
Q510	C-2
Q511	C-2
Q512	B-2
Q513	C-2
Q514	B-2
Q515	B-2
Q516	A-7
Q518	B-5
Q519	B-4
Q523	B-7
Q524	B-7
Q525	B-5
Q526	B-5
Q527	B-6
Q528	B-2
Q529	B-2
Q530	B-2
Q531	B-2
Q532	B-6
Q533	B-5
Q534	D-3
Q537	D-2
Q538	C-3
Q539	B-7
Q540	D-3
Q547	A-9
Q548	B-2
Q549	B-2
Q550	C-2
Q551	C-3
Q553	B-7
Q650	C-7
Q651	C-7
Q652	C-7
Q653	C-7
Q654	C-6
Q656	A-8
Q700	C-6
Q705	C-7
Q706	C-7
Q708	C-7
Q709	C-7
Q710	C-5
Q750	C-6
Q752	B-6
Q753	C-7
Q754	C-7
Q755	C-7
Q756	C-7
Q757	C-5

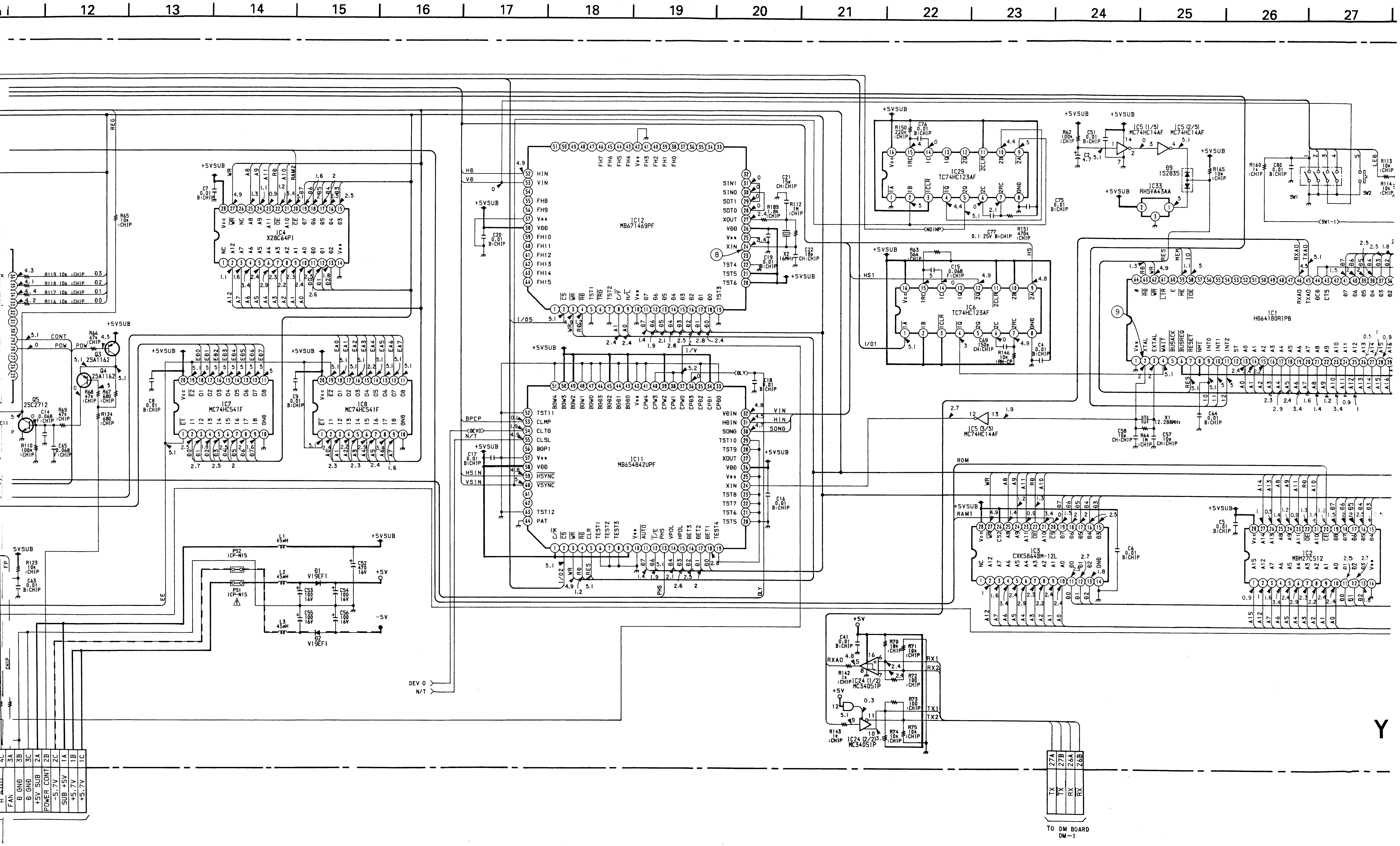
DIODE	
D401	E-10
D402	C-5
D450	A-5
D451	B-4
D501	C-1
D502	B-1
D503	C-1
D504	A-8
D506	D-2
D507	B-1
D508	B-1
D509	E-1
D510	E-1
D511	D-1
D512	D-1
D513	C-1
D514	C-1
D515	B-1
D516	A-7
D518	A-6
D520	A-7
D521	A-7
D522	B-7
D524	E-2
D525	D-3
D527	A-5
D529	A-1
D634	A-9
D652	B-7
D653	A-8

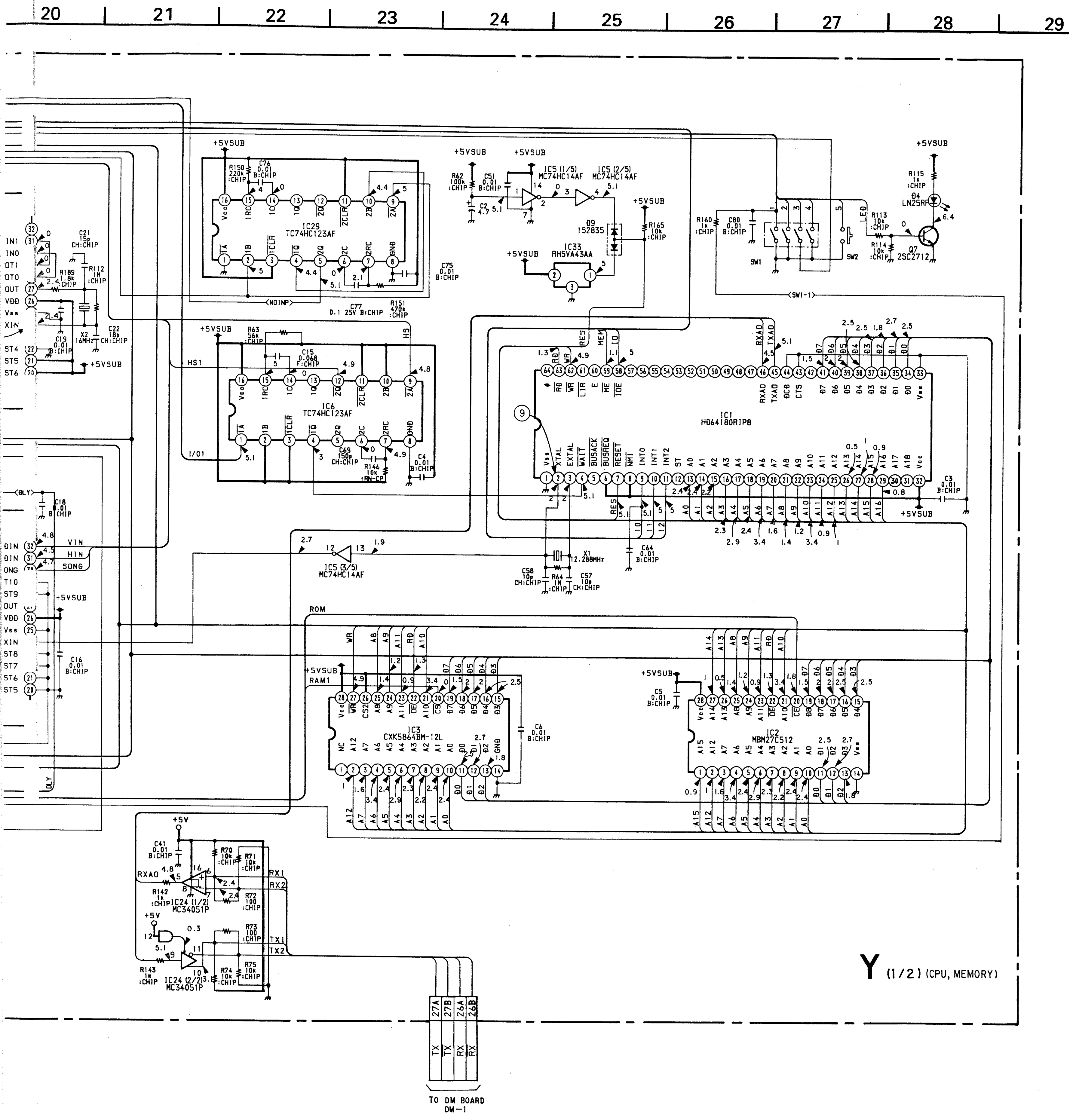
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

Y BOARD(1/2) (Page 247 – 251)

Y

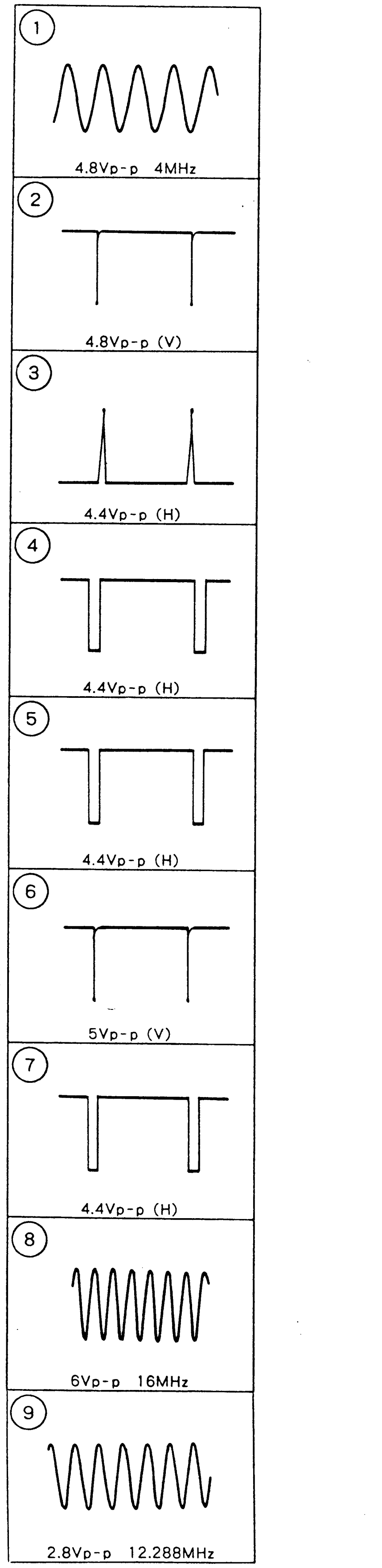

IC10
MB670840PF
IC9
MB8855-1314N
IC4
X28C64P1
IC7
MC74HC541F
IC8
MC74HC541F
IC32
MC74HC541F
IC28 (1/4) MC74HC00AF
IC28 (2/4) MC74HC00AF
IC28 (3/4) MC74HC00AF
IC28 (4/4) MC74HC00AF
IC31 (1/2) MC74HC14AF
IC31 (2/2) MC74HC14AF
IC30 (1/2) MC74HC126AF
IC30 (2/2) MC74HC125AF
IC5 (4/5) MC74HC14AF
IC34 MC74HC157AF
Q8 2SC2712
Q3 2SA1162
Q4 2SA1162
Q5 2SC2712
D8 1S2837
X3 4MHz
D1 V19EF1
D2 V19EF1
PS1 ICP-N15
PS2 ICP-N15
L1 45μH
L2 45μH
L3 45μH
C52 470 16V
+5VSUB
+5V
-5V
VS, HS, VSIN, HSIN
I/04
A0 ~ A3, RD, WR, RES
D0 ~ D7
VD
CP
HFHD
INT/EXT
DEV O
N/T
Y-1
TO DM BOARD
DM-1
INT/EXT
RGB/VIDEO (A)
ON/OFF (R)
ON/OFF (G)
VIDEO/YC (2)
ON/OFF (B)
CLEAR BLUE
CODE 2
CODE 1
TRI/NOT
COLOR/W&B
SECAM ON
SLOT SEL
SEL1
GBR/YPBPR
V. IN SEL
VID/OTHER
SEL2
NC
FAC
CODE 3
GND
DE DET
A0
A1
A2
A3
A4
A5
A6
A7
DATT WR
D0
D1
D2
D3
D4
D5
D6
D7
VS (BB. Y)
CP
LEDWR
SIRCS
S ON G
HS (BB. Y)
V INV
H INV
VS (Y. BA)
VD
HFHD
HS (Y. BA)
RIN1
RIN2
GIN1
GIN2
BIN1
BIN2
LENS PROT
HV PROT
V STOP
GND
ΣIK PROT
H STOT
FAN PROT
+5V SUB
POWER CONT
-5.7V
SUB +5V
+5.7V


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
REG
+5VSUB
IC4
X28C64P1
IC7
MC74HC541F
IC8
MC74HC541F
IC12
MB671469PF
IC11
MB654842UPF
IC29
TC74HC123AF
IC6
TC74HC123AF
IC5 (1/5)
MC74HC14AF
IC5 (2/5)
MC74HC14AF
IC5 (3/5)
MC74HC14AF
IC33
RH5VA43AA
D9
1S2835
IC1
HD64180R1P8
IC3
CXK5864BM-12L
IC2
MBM27C512
IC24 (1/2)
MC34051P
IC24 (2/2)
MC34051P
Q3
2SA1162
Q4
2SA1162
Q5
2SC2712
X1
12.288MHz
X2
16MHz
L1
45μH
L2
45μH
L3
45μH
D1
V19EF1
D2
V19EF1
PS1
ICP-N15
PS2
ICP-N15
+5V
-5V
CONT
POW
HD
VD
HS1
I/01
I/05
I/02
BPCP
N/T
HSIN
VSIN
DEV0
SW1
SW2
LED
ROM
RAM1
RAM2
RXA0
TXA0
RX1
RX2
TX1
TX2
5VSUB
EE
FAN
Φ GND
+5V SUB
POWER CONT
-5.7V
SUB +5V
+5.7V
27A
27B
26A
26B
TX
RX
TO DM BOARD
DM-1
DEV 0
N/T
Y


20
21
22
23
24
25
26
27
28
29
Y (1/2) (CPU, MEMORY)
IC1 HD64180R1P8
IC2 MBM27C512
IC3 CXK5864BM-12L
IC6 TC74HC123AF
IC29 TC74HC123AF
IC5 (1/5) MC74HC14AF
IC5 (2/5) MC74HC14AF
IC5 (3/5) MC74HC14AF
IC33 RH5VA43AA
IC24 (1/2) MC34051P
IC24 (2/2) MC34051P
D9 1S2835
D4 LN25RP
Q7 2SC2712
X1 12.288MHz
X2 16MHz
SW1
SW2
ROM
RAM1
+5VSUB
+5V
RXA0
TXA0
RX1
RX2
TX1
TX2
27A
27B
26A
26B
TX
TX
RX
RX
TO DM BOARD
DM-1
<NOINP>
<SW1-1>
<DLY>
HS1
I/O1
VIN
HIN
SONG

Y (1/2)	IC1	HD64180R1P8	CPU
	2	MBM27C512-20	PROGRAM ROM
	3	CXK5864BM-12L	RAM
	4	X28C64PI	EE PROM.
	5	MC74HC14AF	INVERTER
	6	TC74HC123AF	WAIT CONTROL&REFORM, H-SYNC PULSE
	7	MC74HC541F	DATA BUS BUFFER
	8	MC74HC541F	ADDRESS BUS BUFFER
	9	MB8855-1314N	SIRCS DECODE
	10	MB670840PF	ADDRESS ENCODE/ PARALLEL INTERFACE/ INTERRUPT CONTROL
	11	MB654842UPF	SYNC CONTORL&CLAMP PULSE GEN.
	12	MB671469PF	fH/fV DETECT
	24	MC34051P	RS422 LINE DRIVER/RECIVER
	28	MC74HC00AF	ADDRESS ENCODE
	29	TC74HC123AF	V-SYNC DETECT
	1	2SA1162	RESET PULSE GENERATE
	2	2SC2712	RESET PULSE GENERATE
	3	2SA1162	POWER CONTROL DRIVE
	4	2SA1162	POWER DOWN DETECT
	5	2SC2712	SIRCS IC RESET
	7	2SC2712	LED DRIVE
	D1	V19EF1	VOLTAGE DROP DIODE
	2	V19EF1	VOLTAGE DROP DIODE
	3	1S2835	RECTIFICATION
	4	LN25RP	LED
	5	1S2835	OSC KILL

Y BOARD (1/2) WAVEFORMS



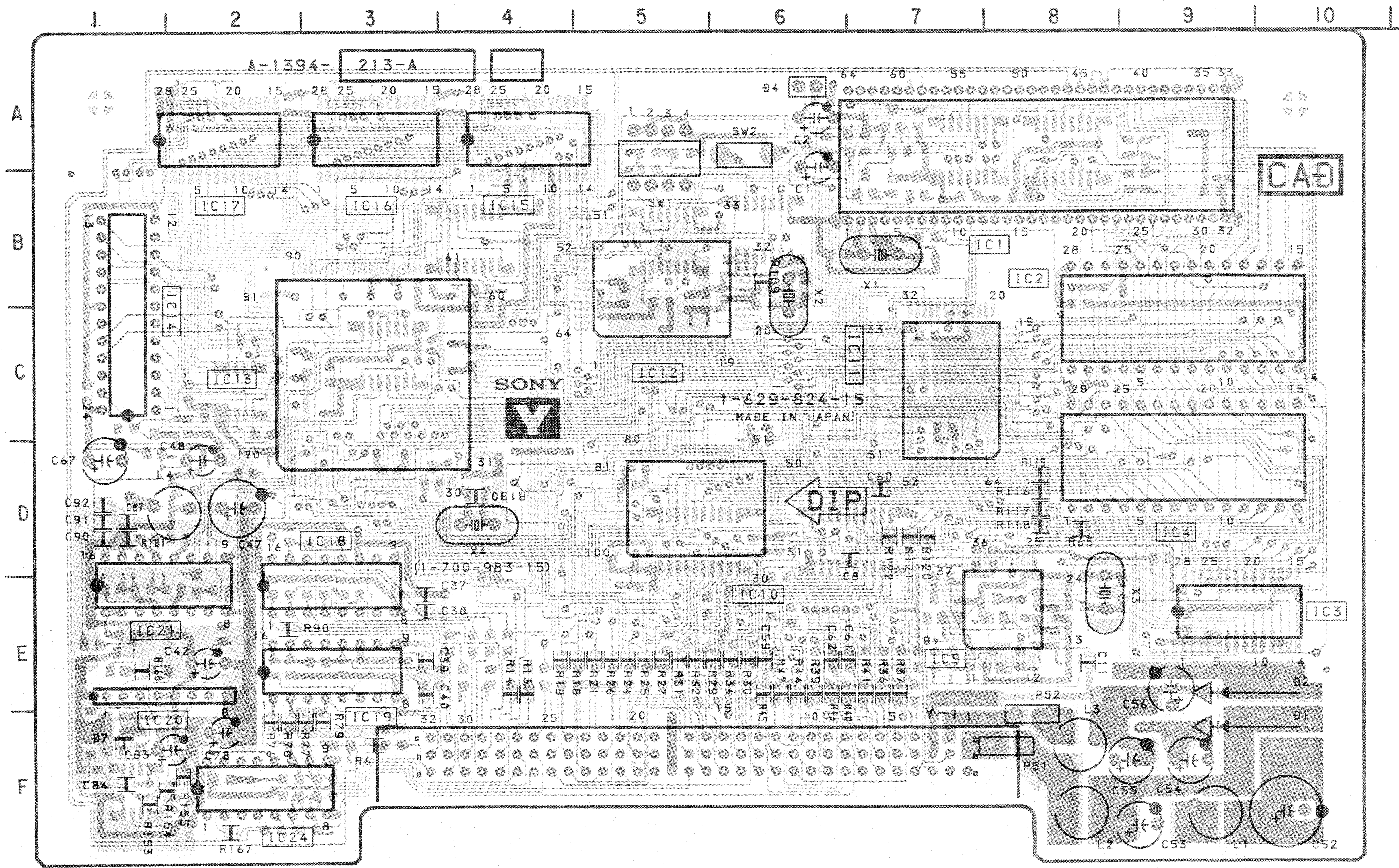
Y [CPU MEMORY]

Y BOARD
(COMPONENT SIDE)

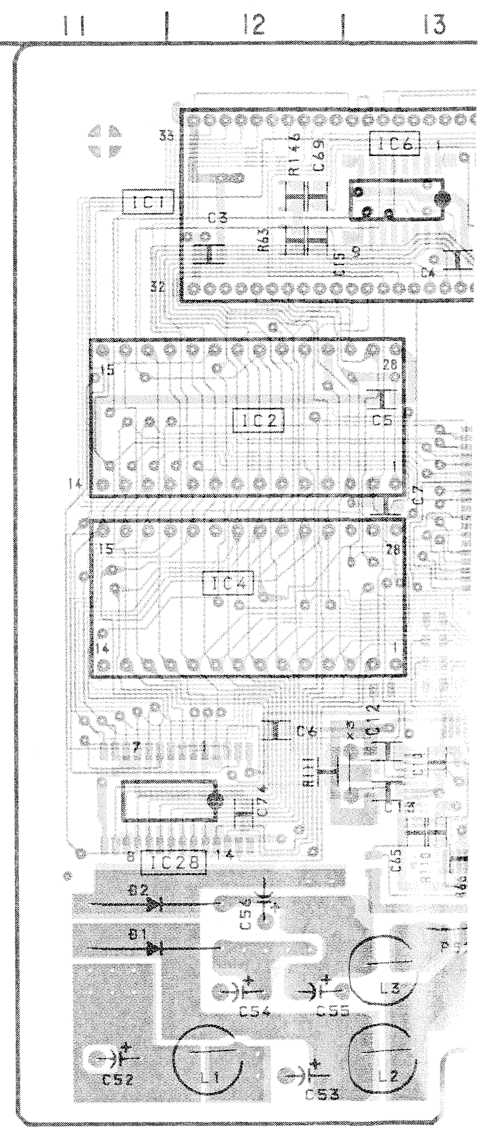
IC	
IC1	A – 8
IC2	C – 9
IC3	E – 9
IC4	D – 9
IC9	E – 7
IC10	D – 5
IC11	C – 7
IC12	C – 5
IC13	C – 2
IC14	C – 1
IC15	A – 4
IC16	A – 3
IC17	A – 2
IC18	E – 3
IC19	E – 3
IC20	E – 1
IC21	E – 1
IC24	F – 2

DIODE	
D1	F – 10
D2	E – 10
D4	A – 6
D7	F – 1

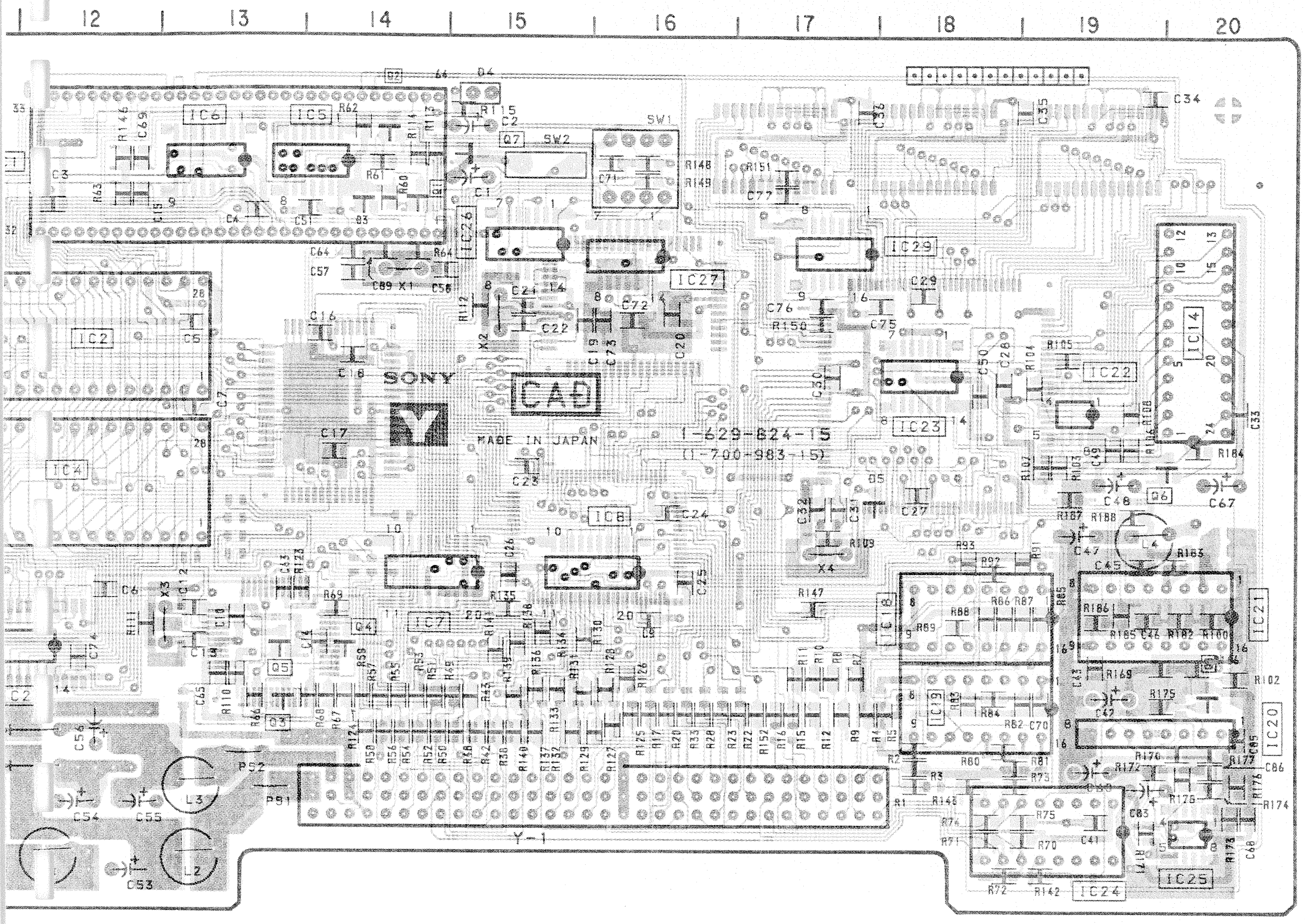
– Y BOARD – (COMPONENT SIDE) (Page 257 – 260)


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
A-1394-213-A
SONY
Y
1-629-824-15
MADE IN JAPAN
DIP
CAD
(1-700-983-15)
IC1
IC2
IC3
IC4
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC24
SW1
SW2
X1
X2
X3
X4
D1
D2
D4
D7
PS1
PS2
L1
L2
L3
L4
C52
C53
C54
C55
C56
Y-1

(CONDUCTOR SIDE)


11
12
13
IC1
IC2
IC4
IC6
IC28
D1
D2
C52
C53
C54
C55
C56
L1
L2
L3

TO SIDE)


12
13
14
15
16
17
18
19
20
IC2
IC4
IC5
IC6
IC7
IC8
IC14
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC29
SONY
Y
CAD
MADE IN JAPAN
1-629-824-15
(1-700-983-15)
SW1
SW2
PS1
PS2
Y-1

Y BOARD
(CONDUCTOR SIDE)

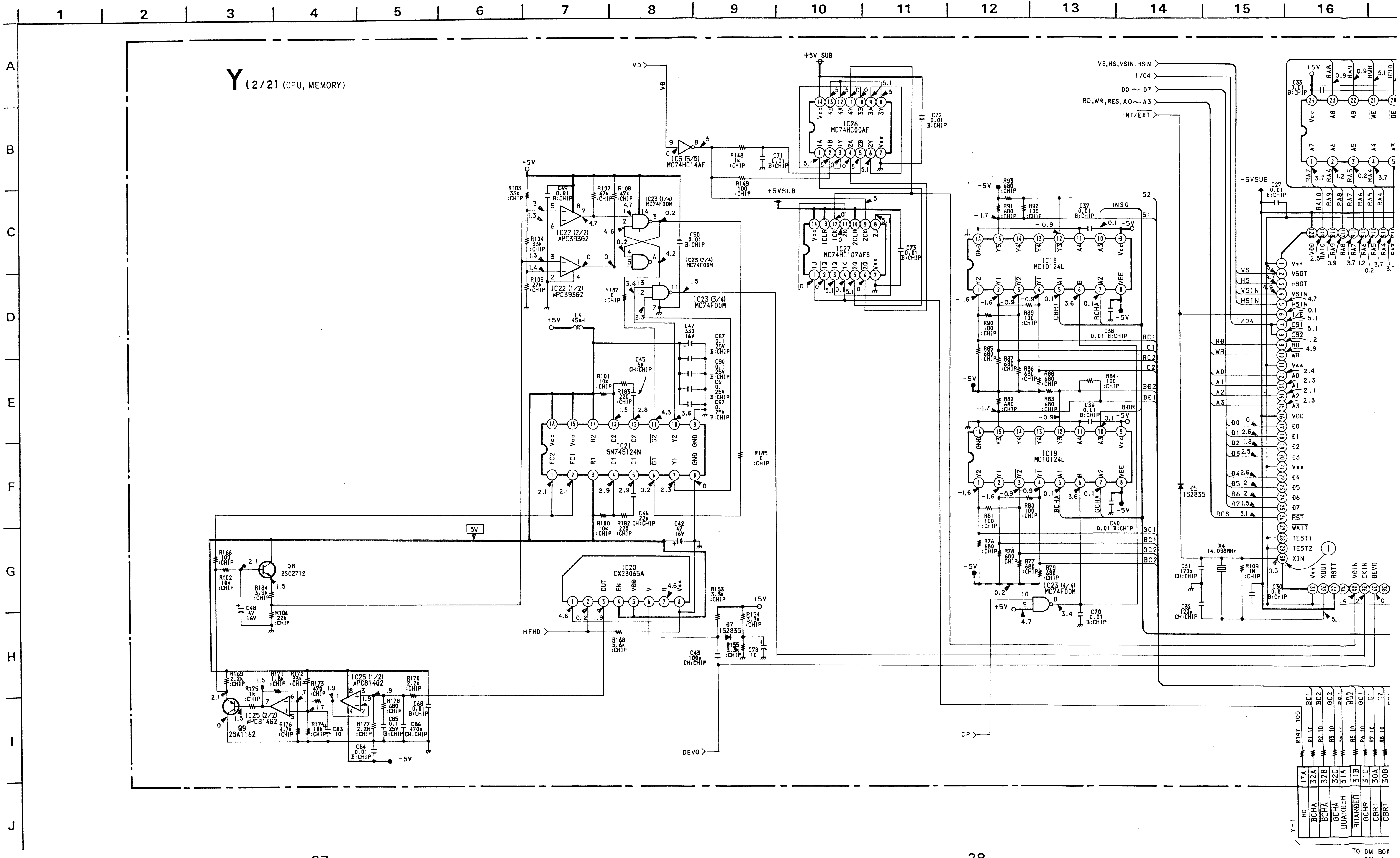
IC	
IC2	C - 12
IC4	D - 12
IC5	A - 13
IC6	A - 13
IC7	D - 14
IC8	D - 16
IC14	C - 20
IC18	E - 18
IC19	E - 18
IC20	E - 20
IC21	E - 20
IC22	C - 19
IC23	C - 18
IC24	F - 19
IC25	F - 20
IC26	B - 15
IC27	B - 16
IC28	E - 12
IC29	B - 17

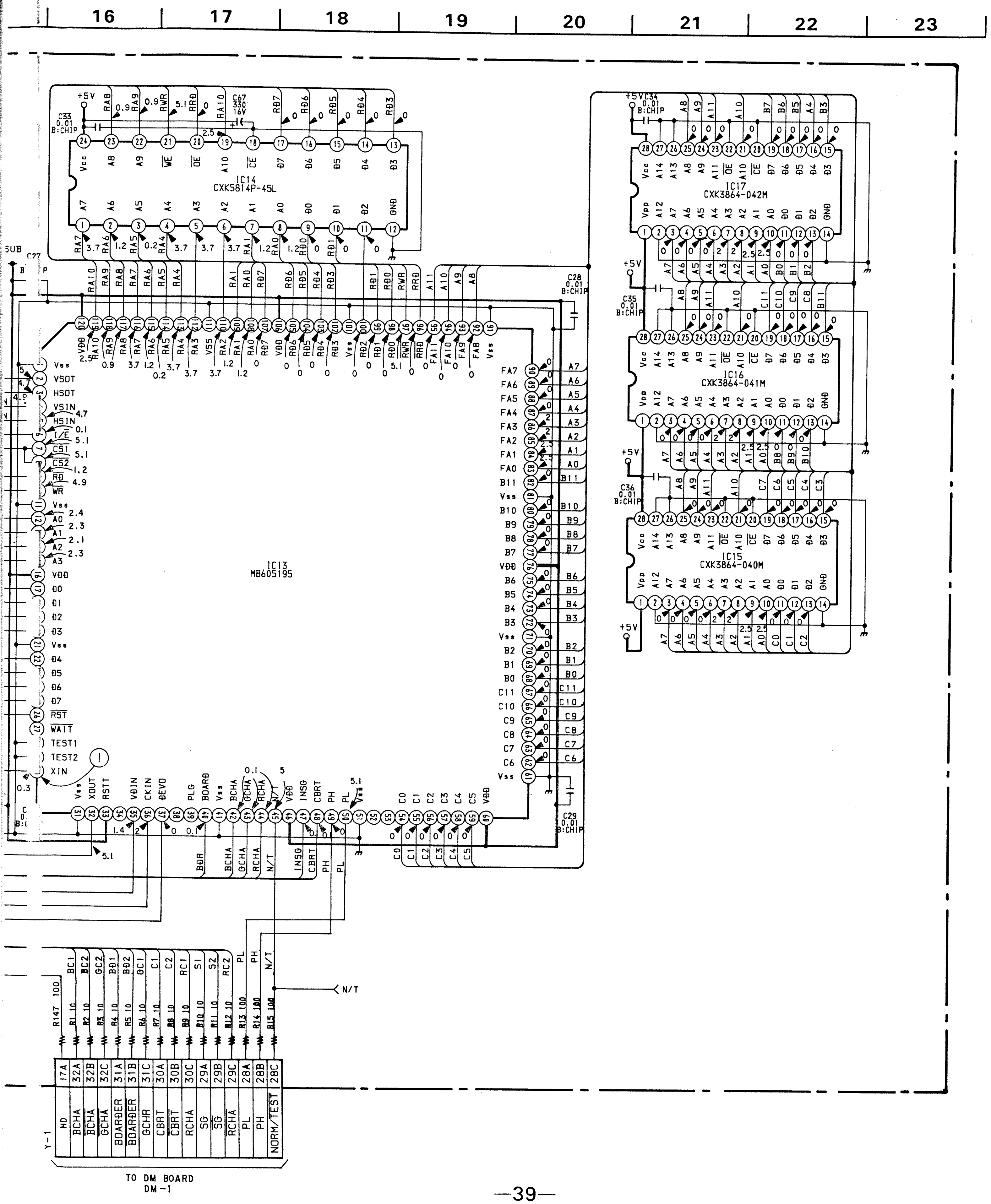
TRANSISTOR	
Q1	B - 14
Q2	A - 14
Q3	E - 13
Q4	E - 14
Q5	E - 13
Q6	D - 19
Q7	A - 15
Q9	E - 20

DIODE	
D1	F - 11
D2	E - 11
D3	B - 14
D4	A - 15
D5	D - 17

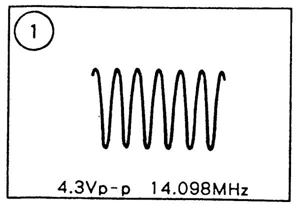
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

Y BOARD(2/2) (Page 252 – 256) **Y**


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
Y (2/2) (CPU, MEMORY)
VD
IC5 (5/5) MC74HC14AF
+5V SUB
IC26 MC74HC00AF
IC27 MC74HC107AFS
+5VSUB
IC22 (2/2) μPC393G2
IC22 (1/2) μPC393G2
IC23 (1/4) MC74F00M
IC23 (2/4) MC74F00M
IC23 (3/4) MC74F00M
IC23 (4/4) MC74F00M
IC21 SN74S124N
IC20 CX23065A
IC18 MC10124L
IC19 MC10124L
IC25 (1/2) μPC814G2
IC25 (2/2) μPC814G2
Q6 2SC2712
Q9 2SA1162
D5 1S2835
D7 1S2835
X4 14.098MHz
L4 45μH
VS,HS,VSIN,HSIN
I/O4
D0 ~ D7
RD,WR,RES,A0~A3
INT/EXT
INSG
S1
S2
RC1
C1
RC2
C2
BO2
BO1
BOR
GC1
BC1
GC2
BC2
HFHD
DEVO
CP
5V
-5V
Y-1
HD
BCHA
GCHA
BOARDER
GCHR
CBRT
TO DM BOA
DM-1


16
17
18
19
20
21
22
23
IC14
CXK5814P-45L
IC13
MB605195
IC17
CXK3864-042M
IC16
CXK3864-041M
IC15
CXK3864-040M
C33 0.01 B:CHIP
C67 330 16V
C28 0.01 B:CHIP
C29 0.01 B:CHIP
C34 0.01 B:CHIP
C35 0.01 B:CHIP
C36 0.01 B:CHIP
+5V
N/T
Y-1
TO DM BOARD
DM-1

Y BOARD (2/2) WAVEFORMS



Note : INPUT SELECT button ON

Y (2/2)	IC13	MB605195	CHARACTER&TEST PATTERN GEN.
	14	CXK5814P-45L	CHARACTER DISPLAY RAM
	15	CXK3864-040M	CHARACTER FONT ROM No.1
	16	CXK3864-041M	CHARACTER FONT ROM NO.2
	17	CXK3864-042M	CHARACTER FONT ROM NO.3
	18	MC10124L	CHARACTER&TEST PATTERN SIGNAL,TTL→
	19	MC10124L	CHARACTER SIGNAL,TTL→ ECL TRANSLATION
	20	SIL8P	PHASE COMPARATER
	21	SN74S124N	DUAL VOLTAGE CONTROLLED OSC.
	22	μPC393G2	WINDOW COMPARATER
	23	MC74F00M	VCO SELECT
	25	μPC393G2	VOLTAGE COMPARATER
	26	MC74HC00AF	VD SHIFT FOR CHARACTER GEN.
	27	SN74HC107ANS	VD SHIFT FOR CHARACTER GEN.
	Q6	2SC2712	BUFFER
	D6	1S2835	

SECTION 9
ELECTRICAL PARTS LIST

BA

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- ✱ : Selected to yield optimum performance.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1135-692-A	BA BOARD, COMPLETE ******************			
	*1-568-984-11	CONNECTOR, MALE 96P			
	1-570-859-11	SWITCH, SLIDE			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<FILTER>			
BPF1	1-236-366-11	MODULE, TRAP			
BPF2	1-236-365-11	MODULE, TRAP			
		<CAPACITOR>			
C1	1-124-910-11	ELECT	47MF	20%	50V
C2	1-124-910-11	ELECT	47MF	20%	50V
C3	1-124-910-11	ELECT	47MF	20%	50V
C7	1-124-907-11	ELECT	10MF	20%	50V
C8	1-124-122-11	ELECT	100MF	20%	50V
C9	1-124-122-11	ELECT	100MF	20%	50V
C10	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C11	1-124-907-11	ELECT	10MF	20%	50V
C12	1-124-910-11	ELECT	47MF	20%	50V
C13	1-124-910-11	ELECT	47MF	20%	50V
C14	1-124-910-11	ELECT	47MF	20%	50V
C15	1-124-910-11	ELECT	47MF	20%	50V
C16	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C17	1-124-910-11	ELECT	47MF	20%	50V
C18	1-124-910-11	ELECT	47MF	20%	50V
C19	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C23	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C24	1-124-910-11	ELECT	47MF	20%	50V
C25	1-124-910-11	ELECT	47MF	20%	50V
C26	1-124-910-11	ELECT	47MF	20%	50V
C27	1-124-910-11	ELECT	47MF	20%	50V
C28	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C29	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C30	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C31	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C32	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C33	1-124-907-11	ELECT	10MF	20%	50V
C34	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C35	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C36	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C37	1-124-903-11	ELECT	1MF	20%	50V
C39	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C40	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C41	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C42	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C43	1-124-907-11	ELECT	10MF	20%	50V
C44	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C45	1-163-245-11	CERAMIC CHIP	56PF	5%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C46	1-124-119-00	ELECT	330MF	20%	16V
C47	1-124-119-00	ELECT	330MF	20%	16V
C48	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C49	1-136-153-00	FILM	0.01MF	5%	50V
C50	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C51	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C52	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C53	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C54	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C55	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C56	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C57	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C58	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C59	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C60	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C61	1-136-177-00	FILM	1MF	5%	50V
C62	1-136-177-00	FILM	1MF	5%	50V
C63	1-124-122-11	ELECT	100MF	20%	50V
C67	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C68	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C69	1-163-120-00	CERAMIC CHIP	130PF	5%	50V
C70	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C71	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C72	1-124-927-11	ELECT	4.7MF	20%	50V
C73	1-124-903-11	ELECT	1MF	20%	50V
C74	1-136-171-00	FILM	0.33MF	5%	50V
C75	1-130-479-00	MYLAR	0.0047MF	5%	50V
C76	1-163-157-00	FILM	0.022MF	5%	50V
C77	1-163-157-00	FILM	0.022MF	5%	50V
C78	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C79	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C82	1-136-177-00	FILM	1MF	5%	50V
C83	1-124-907-11	ELECT	10MF	20%	50V
C84	1-124-910-11	ELECT	47MF	20%	50V
C85	1-124-907-11	ELECT	10MF	20%	50V
C86	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C87	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C88	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C89	1-164-161-11	CERAMIC CHIP	0.0022MF		50V
C90	1-124-122-11	ELECT	100MF	20%	50V
C91	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C104	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C106	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C201	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C202	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C203	1-163-157-00	FILM	0.022MF	5%	50V
C205	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C207	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C208	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C211	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C212	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V

BA

REF.NO.	PART NO.	DESCRIPTION			REMARK
C213	1-124-122-11	ELECT	100MF	20%	50V
C214	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C215	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C216	1-124-122-11	ELECT	100MF	20%	50V
C217	1-124-122-11	ELECT	100MF	20%	50V
C218	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C219	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C220	1-124-122-11	ELECT	100MF	20%	50V
C221	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C222	1-124-122-11	ELECT	100MF	20%	50V
C223	1-124-122-11	ELECT	100MF	20%	50V
C224	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C229	1-124-907-11	ELECT	10MF	20%	50V
C230	1-124-122-11	ELECT	100MF	20%	50V
C231	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C234	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C235	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C236	1-124-907-11	ELECT	10MF	20%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C238	1-124-907-11	ELECT	10MF	20%	50V
C239	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C240	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C241	1-124-927-11	ELECT	4.7MF	20%	50V
C242	1-124-907-11	ELECT	10MF	20%	50V
C243	1-124-907-11	ELECT	10MF	20%	50V
C244	1-124-907-11	ELECT	10MF	20%	50V
C301	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C302	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C303	1-124-916-11	ELECT	22MF	20%	50V
C304	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C305	1-124-916-11	ELECT	22MF	20%	50V
C306	1-124-910-11	ELECT	47MF	20%	50V
C307	1-136-169-00	FILM	0.22MF	5%	50V
C308	1-124-902-00	ELECT	0.47MF	20%	50V
C309	1-124-902-00	ELECT	0.47MF	20%	50V
C310	1-124-902-00	ELECT	0.47MF	20%	50V
C311	1-124-916-11	ELECT	22MF	20%	50V
C312	1-124-910-11	ELECT	47MF	20%	50V
C313	1-124-910-11	ELECT	47MF	20%	50V
C314	1-124-910-11	ELECT	47MF	20%	50V
C315	1-124-910-11	ELECT	47MF	20%	50V
C316	1-124-902-00	ELECT	0.47MF	20%	50V
C317	1-126-101-11	ELECT	100MF	20%	16V
C318	1-124-910-11	ELECT	47MF	20%	50V
C319	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C320	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C321	1-124-907-11	ELECT	10MF	20%	50V
C322	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C323	1-124-907-11	ELECT	10MF	20%	50V
C324	1-124-902-00	ELECT	0.47MF	20%	50V
C325	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C326	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C327	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C328	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C329	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C330	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C331	1-136-177-00	FILM	1MF	5%	50V
C332	1-136-169-00	FILM	0.22MF	5%	50V
C333	1-124-907-11	ELECT	10MF	20%	50V
C334	1-124-910-11	ELECT	47MF	20%	50V
C335	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C336	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C337	1-163-089-00	CERAMIC CHIP	6PF	0.25PF	50V
C338	1-124-907-11	ELECT	10MF	20%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C339	1-124-903-11	ELECT	1MF	20%	50V
C340	1-124-903-11	ELECT	1MF	20%	50V
C341	1-124-907-11	ELECT	10MF	20%	50V
C342	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C343	1-124-910-11	ELECT	47MF	20%	50V
C344	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C346	1-124-907-11	ELECT	10MF	20%	50V
C347	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C350	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C351	1-124-903-11	ELECT	1MF	20%	50V
C352	1-124-907-11	ELECT	10MF	20%	50V

<TRIMMER>

CT101	1-141-181-11	CAP, TRIMMER
CT102	1-141-181-11	CAP, TRIMMER

<DIODE>

D1	8-719-400-18	DIODE MA152WK
D2	8-719-400-18	DIODE MA152WK
D3	8-719-400-18	DIODE MA152WK
D4	8-719-400-18	DIODE MA152WK
D5	8-719-400-18	DIODE MA152WK
D6	8-719-104-34	DIODE 1S2836
D7	8-719-400-18	DIODE MA152WK
D8	8-719-400-18	DIODE MA152WK
D9	8-719-400-18	DIODE MA152WK
D10	8-719-400-18	DIODE MA152WK
D11	8-719-800-76	DIODE 1SS226
D12	8-719-400-18	DIODE MA152WK
D13	8-719-400-18	DIODE MA152WK
D14	8-719-400-18	DIODE MA152WK
D101	8-719-105-46	DIODE RD3.3M-B2
D102	8-719-105-82	DIODE RD5.1M-B2
D103	8-719-400-18	DIODE MA152WK
D107	8-719-400-18	DIODE MA152WK
D108	8-719-900-95	DIODE V09G
D109	8-719-900-95	DIODE V09G
D110	8-719-105-XX	DIODE RD6.2M-B1
D112	8-719-400-18	DIODE MA152WK
D113	8-719-400-18	DIODE MA152WK
D118	8-719-104-34	DIODE 1S2836
D119	8-719-400-18	DIODE MA152WK
D130	8-719-400-18	DIODE MA152WK
D132	8-719-104-34	DIODE 1S2836
D201	8-719-400-18	DIODE MA152WK
D301	8-719-400-18	DIODE MA152WK
D303	8-719-400-18	DIODE MA152WK
D304	8-719-105-63	DIODE RD4.3M-B1
D350	8-719-400-18	DIODE MA152WK
D351	8-719-400-18	DIODE MA152WK
D352	8-719-400-18	DIODE MA152WK

<DELAY LINE>

DL101	1-415-122-31	DELAY LINE, 1H (PAL)
DL102	1-402-679-11	DELAY LINE
DL103	1-415-494-11	DELAY LINE, Y
DL104	1-415-494-11	DELAY LINE, Y

<FILTER>

FL1	1-236-164-11	ENCAPSULATED COMPONENT

REF.NO.	PART NO.	DESCRIPTION	REMARK
FL2	1-236-620-11	FILTER, LOW PASS	
FL3	1-236-620-11	FILTER, LOW PASS	
FL4	1-236-620-11	FILTER, LOW PASS	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-300-71	IC HD14053BFP	
IC2	8-759-513-47	IC TDA4555/V1	
IC3	8-759-932-16	IC TDA4565	
IC5	8-759-710-42	IC NJM2228M	
IC6	8-759-208-94	IC CX-894	
IC7	8-759-300-71	IC HD14053BFP	
IC8	8-752-034-85	IC CXA1216P	
IC9	8-759-100-96	IC UPC4558G2	
IC10	8-741-692-01	IC SBX1692-01	
IC11	8-759-979-16	IC CX-7916	
IC12	1-808-891-11	MODULE SNY-9202	
IC13	8-759-100-96	IC UPC4558G2	
IC14	8-759-929-84	IC SN74LS12NS	
IC15	1-809-576-11	MODULE, H8B7178B	
IC16	8-759-701-79	IC LM7812CT	
IC17	8-759-504-46	IC PQ05RF1	
IC19	8-759-926-06	IC SN74H126ANS	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L101	1-410-470-11	INDUCTOR 10UH	
L102	1-410-209-51	INDUCTOR CHIP 27UH	
L103	1-410-466-41	INDUCTOR 4.7UH	
L104	1-408-406-00	INDUCTOR 5.6UH	
L105	1-404-539-11	COIL	
L106	1-404-554-11	COIL	
L107	1-404-554-11	COIL	
L108	1-404-554-11	COIL	
L109	1-408-397-00	INDUCTOR 1UH	
L110	1-410-466-41	INDUCTOR 4.7UH	
L111	1-410-466-41	INDUCTOR 4.7UH	
L112	1-410-466-41	INDUCTOR 4.7UH	
L114	1-459-155-00	COIL (WITH CORE) 45UH	
L115	1-459-155-00	COIL (WITH CORE) 45UH	
L116	1-410-466-41	INDUCTOR 4.7UH	
L120	1-404-584-11	COIL	
L136	1-408-777-00	INDUCTOR CHIP 10UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q2	8-729-901-01	TRANSISTOR DTC144EK	
Q3	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q7	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8	8-729-901-01	TRANSISTOR DTC144EK	
Q9	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q10	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q11	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q12	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q13	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q14	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q15	8-729-901-01	TRANSISTOR DTC144EK	
Q16	8-729-901-01	TRANSISTOR DTC144EK	
Q17	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q18	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q19	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q20	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q21	8-729-901-01	TRANSISTOR DTC144EK	
Q22	8-729-901-01	TRANSISTOR DTC144EK	
Q23	8-729-901-01	TRANSISTOR DTC144EK	
Q24	8-729-901-01	TRANSISTOR DTC144EK	
Q25	8-729-901-01	TRANSISTOR DTC144EK	
Q26	8-729-901-01	TRANSISTOR DTC144EK	
Q27	8-729-901-01	TRANSISTOR DTC144EK	
Q28	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q29	8-729-216-22	TRANSISTOR 2SA1162-G	
Q30	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q31	8-729-216-22	TRANSISTOR 2SA1162-G	
Q32	8-729-216-22	TRANSISTOR 2SA1162-G	
Q33	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q34	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q35	8-729-901-01	TRANSISTOR DTC144EK	
Q36	8-729-216-22	TRANSISTOR 2SA1162-G	
Q37	8-729-901-01	TRANSISTOR DTC144EK	
Q38	8-729-901-01	TRANSISTOR DTC144EK	
Q39	8-729-116-06	TRANSISTOR 2SK160-K6	
Q40	8-729-116-06	TRANSISTOR 2SK160-K6	
Q41	8-729-901-01	TRANSISTOR DTC144EK	
Q43	8-729-901-01	TRANSISTOR DTC144EK	
Q45	8-729-901-01	TRANSISTOR DTC144EK	
Q48	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q49	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q50	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q51	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q52	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q118	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q119	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q120	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q152	8-729-901-01	TRANSISTOR DTC144EK	
Q201	8-729-901-01	TRANSISTOR DTC144EK	
Q202	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q203	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q204	8-729-901-01	TRANSISTOR DTC144EK	
Q205	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q206	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q207	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q208	8-729-901-01	TRANSISTOR DTC144EK	
Q209	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q210	8-729-216-22	TRANSISTOR 2SA1162-G	
Q212	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q213	8-729-216-22	TRANSISTOR 2SA1162-G	
Q301	8-729-140-96	TRANSISTOR 2SD774-34	
Q302	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q303	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q304	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q305	8-729-901-01	TRANSISTOR DTC144EK	
Q306	8-729-901-01	TRANSISTOR DTC144EK	
Q307	8-729-901-01	TRANSISTOR DTC144EK	
Q308	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q310	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q311	8-729-901-01	TRANSISTOR DTC144EK	
Q312	8-729-901-01	TRANSISTOR DTC144EK	
Q313	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q314	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q315	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q316	8-729-901-01	TRANSISTOR DTC144EK	
Q317	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q318	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q319	8-729-901-01	TRANSISTOR DTC144EK	
Q320	8-729-901-01	TRANSISTOR DTC144EK	
Q321	8-729-901-01	TRANSISTOR DTC144EK	

BA

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q323	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q324	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q325	8-729-901-01	TRANSISTOR DTC144EK	
Q326	8-729-901-01	TRANSISTOR DTC144EK	
Q327	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q329	8-729-116-06	TRANSISTOR 2SK160-K6	
Q330	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q336	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q337	8-729-216-22	TRANSISTOR 2SA1162-G	
Q338	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q340	8-729-901-01	TRANSISTOR DTC144EK	
Q350	8-729-901-01	TRANSISTOR DTC144EK	
Q351	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q352	8-729-230-49	TRANSISTOR 2SC2712-YG	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R2	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R3	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R4	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R6	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R7	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R11	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R12	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R13	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R14	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R15	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R16	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R17	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R18	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R19	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R20	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R21	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R22	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R23	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R24	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R25	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R26	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R27	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R29	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R30	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R31	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R32	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R33	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R34	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R38	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R39	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R40	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R41	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R42	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R43	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R44	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R45	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R46	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R47	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R48	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R49	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R50	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R51	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R52	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R53	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R54	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R55	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R56	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R57	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R58	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R59	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R60	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R61	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R63	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R64	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R65	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R66	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R67	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R68	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R69	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R70	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R71	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R72	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R73	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R74	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R75	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R76	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R77	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R78	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R80	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R81	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R82	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R83	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R84	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R85	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R86	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R87	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R88	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R89	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R90	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R91	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R92	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R93	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R94	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R95	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R103	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R105	1-216-066-00	METAL GLAZE	5.1K	5%	1/10W	
R106	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R107	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R108	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R118	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R119	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R120	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R123	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R124	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R125	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R126	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R127	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R128	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R129	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R130	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R131	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R132	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R133	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R134	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R135	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R141	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R142	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R143	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R145	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R146	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R148	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R149	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R150	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R201	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R202	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R203	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R205	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R206	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R207	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R209	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R210	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R211	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R212	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R213	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R214	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R215	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R216	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R217	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R218	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R219	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R220	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R221	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R222	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R223	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R224	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R225	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R226	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R227	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R228	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R229	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R230	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R231	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R232	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R233	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R234	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R235	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R236	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R237	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R238	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R239	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R240	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R241	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R242	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R244	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R290	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R302	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R303	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R304	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R305	1-216-005-00	METAL GLAZE	15	5%	1/10W	
R306	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R307	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R308	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R309	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R310	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R311	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R312	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R313	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R314	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R315	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R316	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R317	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R318	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R319	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R320	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R321	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R322	1-216-689-11	METAL CHIP	39K	0.50%	1/10W	
R323	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R324	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R325	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R326	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R327	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R328	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R329	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R330	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R331	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R332	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R333	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R334	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R335	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R336	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R337	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R338	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R339	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R340	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R341	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R342	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R343	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R344	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R345	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R346	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R347	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R348	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R349	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R350	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R351	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R352	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R353	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R354	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R355	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R356	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R357	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R358	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R359	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R360	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R361	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R362	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R363	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R364	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R365	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R366	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R367	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R368	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R369	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R370	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R371	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	

BA BB

REF.NO.	PART NO.	DESCRIPTION	REMARK
R372	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R373	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R374	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R375	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R376	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R377	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R378	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R379	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R380	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R381	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R382	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R383	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R384	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R385	1-216-681-11	METAL CHIP 18K 0.50% 1/10W	
R386	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R387	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
R388	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R389	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
R390	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R391	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R392	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R393	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R394	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R395	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R396	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R397	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R398	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R399	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R410	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R411	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R412	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R415	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R416	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R417	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R418	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R419	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R420	1-216-085-00	METAL GLAZE 33K 5% 1/10W	

<VARIABLE RESISTOR>

RV101	1-230-504-11	RES, ADJ, CARBON 220	
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV103	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV104	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV105	1-228-993-00	RES, ADJ, CARBON 4.7K	

<THERMISTER>

TH101	1-800-071-XX	THERMISTER	

<CRYSTAL>

X101	1-567-413-11	VIBRATOR, CRYSTAL	
X102	1-527-789-00	VINRATOR, CRYSTAL	

****

	A-1135-710-A	BB BOARD, COMPLETE ******************	
	*1-564-595-11	PLUG, CONNECTOR 14P	
	*1-568-984-11	CONNECTOR, MALE 96P	
	4-382-854-11	SCREW (M3X10), P, SW (+)	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C402	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C404	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C405	1-126-101-11	ELECT 100MF	20%	16V	
C406	1-124-120-11	ELECT 220MF	20%	16V	
C407	1-126-101-11	ELECT 100MF	20%	16V	
C408	1-124-907-11	ELECT 10MF	20%	50V	
C409	1-126-101-11	ELECT 100MF	20%	16V	
C412	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C413	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C414	1-124-907-11	ELECT 10MF	20%	50V	
C415	1-126-101-11	ELECT 100MF	20%	16V	
C416	1-126-101-11	ELECT 100MF	20%	16V	
C417	1-124-120-11	ELECT 220MF	20%	16V	
C418	1-126-101-11	ELECT 100MF	20%	16V	
C419	1-126-101-11	ELECT 100MF	20%	16V	
C425	1-126-101-11	ELECT 100MF	20%	16V	
C450	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	
C451	1-126-103-11	ELECT 470MF	20%	16V	
C453	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C501	1-124-907-11	ELECT 10MF	20%	50V	
C502	1-124-907-11	ELECT 10MF	20%	50V	
C503	1-124-477-11	ELECT 47MF	20%	16V	
C504	1-124-477-11	ELECT 47MF	20%	16V	
C505	1-124-927-11	ELECT 4.7MF	20%	50V	
C506	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C507	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C508	1-124-477-11	ELECT 47MF	20%	16V	
C509	1-163-239-11	CERAMIC CHIP 33PF	5%	50V	
C510	1-124-477-11	ELECT 47MF	20%	16V	
C511	1-126-103-11	ELECT 470MF	20%	16V	
C512	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C513	1-124-477-11	ELECT 47MF	20%	16V	
C514	1-124-927-11	ELECT 4.7MF	20%	50V	
C515	1-124-927-11	ELECT 4.7MF	20%	50V	
C516	1-124-927-11	ELECT 4.7MF	20%	50V	
C518	1-124-907-11	ELECT 10MF	20%	50V	
C519	1-124-907-11	ELECT 10MF	20%	50V	
C520	1-124-903-11	ELECT 1MF	20%	50V	
C521	1-124-907-11	ELECT 10MF	20%	50V	
C522	1-124-907-11	ELECT 10MF	20%	50V	
C523	1-163-833-00	CERAMIC CHIP 0.068MF		25V	
C524	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C525	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C526	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C527	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	
C528	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	
C529	1-124-916-11	ELECT 22MF	20%	50V	
C650	1-124-657-00	ELECT 10MF	20%	50V	
C651	1-136-169-00	FILM 0.22MF	5%	50V	
C652	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C653	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C654	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C655	1-124-910-11	ELECT 47MF	20%	50V	
C657	1-126-103-11	ELECT 470MF	20%	16V	
C658	1-124-122-11	ELECT 100MF	20%	50V	
C660	1-124-907-11	ELECT 10MF	20%	50V	
C692	1-124-122-11	ELECT 100MF	20%	50V	
C693	1-124-122-11	ELECT 100MF	20%	50V	
C694	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C695	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C696	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C697	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C700	1-124-657-00	ELECT 10MF	20%	50V	

BB

REF.NO.	PART NO.	DESCRIPTION	REMARK
C701	1-136-169-00	FILM 0.22MF 5% 50V	
C702	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C703	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C707	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C708	1-124-910-11	ELECT 47MF 20% 50V	
C710	1-124-122-11	ELECT 100MF 20% 50V	
C711	1-126-103-11	ELECT 470MF 20% 16V	
C713	1-124-907-11	ELECT 10MF 20% 50V	
C750	1-124-657-00	ELECT 10MF 20% 50V	
C751	1-136-169-00	FILM 0.22MF 5% 50V	
C752	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C753	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C754	1-126-101-11	ELECT 100MF 20% 16V	
C755	1-126-101-11	ELECT 100MF 20% 16V	
C756	1-126-101-11	ELECT 100MF 20% 16V	
C757	1-124-910-11	ELECT 47MF 20% 50V	
C759	1-124-122-11	ELECT 100MF 20% 50V	
C760	1-126-103-11	ELECT 470MF 20% 16V	
C762	1-124-916-11	ELECT 22MF 20% 50V	
C763	1-124-907-11	ELECT 10MF 20% 50V	
C914	1-126-101-11	ELECT 100MF 20% 16V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D401	8-719-900-95	DIODE V09G	
D402	8-719-900-95	DIODE V09G	
D450	8-719-400-18	DIODE MA152WK	
D451	8-719-400-18	DIODE MA152WK	
D452	8-719-105-28	DIODE RD2.4M-B	
D501	8-719-400-18	DIODE MA152WK	
D502	8-719-400-18	DIODE MA152WK	
D503	8-719-400-18	DIODE MA152WK	
D504	8-719-105-82	DIODE RD5.1M-B2	
D505	8-719-911-19	DIODE 1SS119	
D506	8-719-105-82	DIODE RD5.1M-B2	
D507	8-719-105-82	DIODE RD5.1M-B2	
D508	8-719-105-82	DIODE RD5.1M-B2	
D509	8-719-105-82	DIODE RD5.1M-B2	
D510	8-719-105-82	DIODE RD5.1M-B2	
D511	8-719-105-82	DIODE RD5.1M-B2	
D512	8-719-105-82	DIODE RD5.1M-B2	
D513	8-719-105-82	DIODE RD5.1M-B2	
D514	8-719-105-82	DIODE RD5.1M-B2	
D515	8-719-105-82	DIODE RD5.1M-B2	
D516	8-719-106-80	DIODE RD13M-B2	
D518	8-719-106-80	DIODE RD13M-B2	
D520	8-719-105-82	DIODE RD5.1M-B2	
D521	8-719-105-82	DIODE RD5.1M-B2	
D522	8-719-106-80	DIODE RD13M-B2	
D523	8-719-106-80	DIODE RD13M-B2	
D524	8-719-105-82	DIODE RD5.1M-B2	
D525	8-719-105-28	DIODE RD2.4M-B	
D526	8-719-400-18	DIODE MA152WK	
D527	8-719-105-82	DIODE RD5.1M-B2	
D528	8-719-400-18	DIODE MA152WK	
D529	8-719-105-46	DIODE RD3.3M-B2	
D530	8-719-400-18	DIODE MA152WK	
D634	8-719-400-18	DIODE MA152WK	
D652	8-719-400-18	DIODE MA152WK	
D653	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC401	8-759-800-81	IC LA7016	
IC402	8-759-701-79	IC LM7812CT	
IC403	8-759-929-65	IC LM7912CT	
IC404	8-759-300-71	IC HD14053BFP	
IC405	8-759-926-18	IC SN74HC157ANS	
IC407	8-759-926-18	IC SN74HC157ANS	
IC408	8-759-300-71	IC HD14053BFP	
IC409	8-759-300-71	IC HD14053BFP	
IC410	8-759-100-96	IC UPC4558G2	
IC411	8-759-100-96	IC UPC4558G2	
IC412	8-759-145-27	IC UPC1406HA	
IC413	8-749-922-84	IC BX-6474	
IC414	8-749-922-83	IC BX-6473	
IC415	8-749-922-83	IC BX-6473	
IC416	8-749-922-83	IC BX-6473	
IC417	8-749-922-86	IC BX-7913	
IC418	8-749-922-85	IC BX-6475	
IC419	8-749-922-85	IC BX-6475	
IC420	8-749-922-85	IC BX-6475	
IC422	8-759-100-93	IC UPC393G2	
IC423	8-759-925-85	IC SN74HC32ANS	
IC424	8-759-100-93	IC UPC393G2	

<JACK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
J101	1-566-980-21	CONNECTOR, ROUND TYPE 4P	
J102	1-537-257-21	TERMINAL BOARD, INPUT/OUTPUT	
J103	1-537-403-11	TERMINAL BOARD, INPUT/OUTPUT	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L401	1-459-155-00	COIL (WITH CORE) 45UH	
L402	1-459-155-00	COIL (WITH CORE) 45UH	
L403	1-459-155-00	COIL (WITH CORE) 45UH	
L404	1-459-155-00	COIL (WITH CORE) 45UH	
L405	1-410-671-31	INDUCTOR 47UH	
L605	1-410-482-31	INDUCTOR 100UH	
L651	1-410-482-31	INDUCTOR 100UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q401	8-729-140-96	TRANSISTOR 2SD774-34	
Q402	8-729-140-97	TRANSISTOR 2SB734-34	
Q403	8-729-901-01	TRANSISTOR DTC144EK	
Q404	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q405	8-729-901-01	TRANSISTOR DTC144EK	
Q450	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q451	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q452	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q453	8-729-901-01	TRANSISTOR DTC144EK	
Q454	8-729-901-01	TRANSISTOR DTC144EK	
Q456	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q457	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q501	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q502	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q504	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q506	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q507	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q508	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q509	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q510	8-729-901-01	TRANSISTOR DTC144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-01	TRANSISTOR DTC144EK	

BB

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-901-01	TRANSISTOR DTC144EK	
Q515	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q516	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q517	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q518	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q519	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q520	8-729-901-01	TRANSISTOR DTC144EK	
Q521	8-729-901-01	TRANSISTOR DTC144EK	
Q522	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q523	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q524	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q525	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q526	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q527	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q528	8-729-901-01	TRANSISTOR DTC144EK	
Q529	8-729-901-01	TRANSISTOR DTC144EK	
Q530	8-729-901-01	TRANSISTOR DTC144EK	
Q531	8-729-901-01	TRANSISTOR DTC144EK	
Q532	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q533	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q534	8-729-320-62	TRANSISTOR 2SD789-34	
Q535	8-729-901-01	TRANSISTOR DTC144EK	
Q536	8-729-901-01	TRANSISTOR DTC144EK	
Q537	8-729-901-01	TRANSISTOR DTC144EK	
Q538	8-729-901-01	TRANSISTOR DTC144EK	
Q539	8-729-901-01	TRANSISTOR DTC144EK	
Q540	8-729-901-01	TRANSISTOR DTC144EK	
Q541	8-729-901-01	TRANSISTOR DTC144EK	
Q542	8-729-901-01	TRANSISTOR DTC144EK	
Q543	8-729-901-01	TRANSISTOR DTC144EK	
Q544	8-729-901-01	TRANSISTOR DTC144EK	
Q545	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q546	8-729-901-01	TRANSISTOR DTC144EK	
Q547	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q548	8-729-901-01	TRANSISTOR DTC144EK	
Q549	8-729-901-01	TRANSISTOR DTC144EK	
Q550	8-729-901-01	TRANSISTOR DTC144EK	
Q551	8-729-901-01	TRANSISTOR DTC144EK	
Q552	8-729-901-01	TRANSISTOR DTC144EK	
Q553	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q650	8-729-116-05	TRANSISTOR 2SK160-K5	
Q651	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q652	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q653	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q654	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q656	8-729-901-01	TRANSISTOR DTC144EK	
Q700	8-729-116-05	TRANSISTOR 2SK160-K5	
Q701	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q702	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q703	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q704	8-729-923-06	TRANSISTOR FMW-8	
Q705	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q706	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q707	8-729-923-06	TRANSISTOR FMW-8	
Q708	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q709	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q710	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q741	8-729-901-01	TRANSISTOR DTC144EK	
Q750	8-729-116-05	TRANSISTOR 2SK160-K5	
Q751	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q752	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q753	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q754	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q755	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q756	8-729-901-01	TRANSISTOR DTC144EK	
Q757	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q800	8-729-230-49	TRANSISTOR 2SC2712-YG	
		<RESISTOR>	
R401	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R403	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R404	1-216-693-11	METAL CHIP 56K 0.50% 1/10W	
R405	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R450	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R451	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R452	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R453	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R454	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R455	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R456	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R459	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R460	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R461	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R462	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R463	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R464	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R466	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R467	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R468	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R469	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R470	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R471	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R472	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R473	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R474	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R501	1-216-624-11	METAL CHIP 75 0.50% 1/10W	
R502	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R503	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R504	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R505	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R506	1-216-624-11	METAL CHIP 75 0.50% 1/10W	
R507	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R508	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R509	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R510	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R511	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R512	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R513	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R514	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R516	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R518	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R519	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R520	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R521	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R522	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R523	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R524	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R525	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R526	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R527	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R528	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R529	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R530	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R531	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R532	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R533	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R534	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R535	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R536	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R537	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R538	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R539	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R540	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R541	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R542	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R543	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R544	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R545	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R546	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R547	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R548	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R549	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R550	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R551	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R552	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R553	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R554	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R555	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R556	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R557	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R558	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R559	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R560	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R561	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R562	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R563	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R564	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R565	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R566	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R567	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R568	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R569	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R570	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R571	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R572	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R573	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R574	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R575	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R576	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R577	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R578	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R579	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R580	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R581	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R582	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R583	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R584	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R585	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R586	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R587	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R588	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R589	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R590	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R591	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R592	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R593	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R594	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R595	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R596	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R597	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R598	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R599	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R600	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R601	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R602	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R603	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R604	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R605	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R606	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R607	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R608	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R609	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R610	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R611	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R612	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R613	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R614	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R615	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R616	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R617	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R618	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R619	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R620	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R621	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R622	1-216-448-11	METAL OXIDE	39	5%	2W	F
R623	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R624	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R625	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R626	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R627	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R628	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R629	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R630	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R631	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R632	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R633	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R634	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R635	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R636	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R637	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R638	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R639	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R640	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R641	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R642	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R643	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R650	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R651	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R652	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R653	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R654	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R655	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R656	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R657	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R658	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R659	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R660	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R661	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R663	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R664	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R665	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R686	1-216-025-00	METAL GLAZE	100	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R688	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R700	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R701	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R702	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R703	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R704	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R705	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R706	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R707	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R708	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R709	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R710	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R711	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R712	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R713	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R714	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R715	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R716	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R717	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R718	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R719	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R720	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R721	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R722	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R723	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R724	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R725	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R727	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R728	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R729	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R750	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R751	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R752	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R753	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R755	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R756	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R757	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R758	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R759	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R760	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R761	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R762	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R763	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R764	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R765	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R766	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R768	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R769	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R770	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R791	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R836	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R837	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R900	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RL401	1-515-757-11	RELAY
RL402	1-515-757-11	RELAY
RL403	1-515-757-11	RELAY

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
SW101	1-570-859-11	SWITCH, SLIDE

****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1394-300-A	Y BOARD, COMPLETE *****************	
	*1-526-659-00	SOCKET, IC (DP) 28P	
	*1-526-950-11	SOCKET, IC 64P	
	*1-568-984-11	CONNECTOR, MALE 96P	
	1-570-204-21	SWITCH, KEY BOARD	
	1-570-598-11	SWITCH, DIP	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-927-11	ELECT	4.7MF	20%	50V	
C2	1-124-927-11	ELECT	4.7MF	20%	50V	
C3	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C4	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C5	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C6	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C7	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C8	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C9	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C10	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C11	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C12	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C13	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C14	1-163-036-00	CERAMIC CHIP	0.068MF		50V	
C15	1-164-344-11	CERAMIC CHIP	0.068MF	10%	25V	
C16	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C17	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C18	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C19	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C20	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C21	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C22	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C23	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C24	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C25	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C26	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C27	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C28	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C29	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C30	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C32	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C33	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C34	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C35	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C36	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C37	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C38	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C39	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C40	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C41	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C42	1-124-477-11	ELECT	47MF	20%	16V	
C43	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C45	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V	
C46	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C47	1-124-119-00	ELECT	330MF	20%	16V	
C48	1-124-477-11	ELECT	47MF	20%	16V	
C49	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C50	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C51	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C52	1-126-103-11	ELECT	470MF	20%	16V	
C53	1-126-101-11	ELECT	100MF	20%	16V	
C54	1-126-101-11	ELECT	100MF	20%	16V	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C55	1-126-101-11	ELECT	100MF	20%	16V
C56	1-126-101-11	ELECT	100MF	20%	16V
C57	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C58	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C59	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C60	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C61	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C62	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C63	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C64	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C65	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C67	1-124-119-00	ELECT	330MF	20%	16V
C68	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C69	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C70	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C71	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C72	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C73	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C74	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C75	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C76	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C77	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C78	1-124-907-11	ELECT	10MF	20%	50V
C83	1-124-907-11	ELECT	10MF	20%	50V
C84	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C85	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C86	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C87	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C90	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C91	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C92	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1	8-719-971-20	DIODE ERC38-06
D2	8-719-971-20	DIODE ERC38-06
D3	8-719-104-34	DIODE 1S2836
D4	8-719-800-60	DIODE TLR214
D5	8-719-104-34	DIODE 1S2836
D7	8-719-400-18	DIODE MA152WK

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC1	8-759-320-49	IC HD64180R1P8
IC2	8-759-748-29	IC MBM27C512-20
IC3	8-752-332-28	IC CXK5864BM-12L-T6
IC4	8-759-720-67	IC X28C64PI
IC5	8-759-925-80	IC SN74HC14ANS
IC6	8-759-239-55	IC TC74HC123AF
IC7	8-759-008-21	IC MC74HC541F
IC8	8-759-008-21	IC MC74HC541F
IC9	8-759-995-97	IC MB8855-1314N
IC10	8-759-984-56	IC MB670840PF
IC11	8-759-984-59	IC MB654842UPF
IC12	8-759-984-58	IC MB671469PF
IC13	8-759-984-57	IC MB605195
IC14	8-752-322-10	IC CXK5814P-45L
IC15	8-752-333-84	IC CXK3864-040M
IC16	8-752-333-85	IC CXK3864-041M
IC17	8-752-333-86	IC CXK3864-042M
IC18	8-759-301-24	IC HD10124
IC19	8-759-301-24	IC HD10124
IC20	8-752-306-51	IC CX23065A
	*1-563-949-11	SOCKET, SIL 8P; IC20
IC21	8-759-911-24	IC SN74S124N
IC22	8-759-100-93	IC UPC393G2
IC23	8-759-031-50	IC MC74F00M
IC24	8-759-008-57	IC MC34051P
IC25	8-759-114-06	IC UPC814G2-1
IC26	8-759-032-32	IC MC74HC132AF
IC27	8-759-925-98	IC SN74HC107ANS
IC28	8-759-032-01	IC MC74HC00AF
IC29	8-759-239-55	IC TC74HC123AF

<COIL>

REF.NO.	PART NO.	DESCRIPTION
L1	1-459-155-00	COIL (WITH CORE) 45UH
L2	1-459-155-00	COIL (WITH CORE) 45UH
L3	1-459-155-00	COIL (WITH CORE) 45UH
L4	1-459-155-00	COIL (WITH CORE) 45UH

<IC LINK>

REF.NO.	PART NO.	DESCRIPTION
PS1	⚠1-532-679-91	LINK, IC
PS2	⚠1-532-679-91	LINK, IC

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q1	8-729-230-46	TRANSISTOR 2SA1162-YG
Q2	8-729-230-49	TRANSISTOR 2SC2712-YG
Q3	8-729-230-46	TRANSISTOR 2SA1162-YG
Q4	8-729-230-46	TRANSISTOR 2SA1162-YG
Q5	8-729-230-49	TRANSISTOR 2SC2712-YG
Q6	8-729-230-49	TRANSISTOR 2SC2712-YG
Q7	8-729-230-49	TRANSISTOR 2SC2712-YG
Q9	8-729-230-46	TRANSISTOR 2SA1162-YG

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W
R2	1-216-001-00	METAL GLAZE	10	5%	1/10W
R3	1-216-001-00	METAL GLAZE	10	5%	1/10W
R4	1-216-001-00	METAL GLAZE	10	5%	1/10W
R5	1-216-001-00	METAL GLAZE	10	5%	1/10W
R6	1-216-001-00	METAL GLAZE	10	5%	1/10W
R7	1-216-001-00	METAL GLAZE	10	5%	1/10W
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W
R9	1-216-001-00	METAL GLAZE	10	5%	1/10W
R10	1-216-001-00	METAL GLAZE	10	5%	1/10W
R11	1-216-001-00	METAL GLAZE	10	5%	1/10W
R12	1-216-001-00	METAL GLAZE	10	5%	1/10W
R13	1-216-025-00	METAL GLAZE	100	5%	1/10W
R14	1-216-025-00	METAL GLAZE	100	5%	1/10W
R15	1-216-025-00	METAL GLAZE	100	5%	1/10W
R17	1-216-037-00	METAL GLAZE	330	5%	1/10W
R18	1-216-025-00	METAL GLAZE	100	5%	1/10W
R19	1-216-025-00	METAL GLAZE	100	5%	1/10W
R20	1-216-037-00	METAL GLAZE	330	5%	1/10W
R21	1-216-025-00	METAL GLAZE	100	5%	1/10W
R22	1-216-025-00	METAL GLAZE	100	5%	1/10W
R23	1-216-025-00	METAL GLAZE	100	5%	1/10W
R24	1-216-037-00	METAL GLAZE	330	5%	1/10W
R25	1-216-037-00	METAL GLAZE	330	5%	1/10W
R26	1-216-037-00	METAL GLAZE	330	5%	1/10W
R27	1-216-025-00	METAL GLAZE	100	5%	1/10W
R28	1-216-025-00	METAL GLAZE	100	5%	1/10W
R29	1-216-025-00	METAL GLAZE	100	5%	1/10W
R30	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W

Y

REF.NO.	PART NO.	DESCRIPTION				REMARK
R31	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R32	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R33	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R34	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R36	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R37	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R38	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R39	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R40	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R41	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R42	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R43	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R44	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R45	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R46	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R47	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R48	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R49	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R50	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R51	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R52	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R53	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R54	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R55	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R56	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R57	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R58	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R59	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R60	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R61	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R62	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R63	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R64	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R65	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R66	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R67	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R68	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R69	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R70	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R71	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R72	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R73	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R74	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R75	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R76	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R77	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R78	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R79	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R80	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R81	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R82	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R83	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R84	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R85	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R86	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R87	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R88	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R89	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R90	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R91	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R92	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R93	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R100	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R103	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R104	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R105	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R106	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R107	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R110	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R111	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R112	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R113	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R114	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R115	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R125	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R127	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R129	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R130	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R131	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R132	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R133	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R134	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R135	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R136	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R137	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R138	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R139	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R140	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R141	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R142	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R143	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R146	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R147	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R148	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R149	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R150	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R151	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R152	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R153	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R154	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R155	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R166	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R167	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R168	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R169	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R170	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R171	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R172	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R173	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R174	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R175	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R176	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R177	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W	
R178	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R182	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R183	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R184	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R185	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R187	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R189	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R190	1-216-037-00	METAL GLAZE 330 5% 1/10W	

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
X1	1-578-687-11	VIBRATOR, CRYSTAL	
X2	1-577-116-21	VIBRATOR, CRYSTAL	
X3	1-567-192-11	OSCILLATOR, CERAMIC	
X4	1-577-353-11	VIBRATOR, CERAMIC	